EDEXCEL GCSE MATHEMATICS (MODULAR 2381)

MATHS



EXAM QUESTION PACK

UNIT 3 (PAPERS 11 AND 12) FOUNDATION TIER 5384F PAPERS

STEMUP

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Centre No.						Paper Reference								Surname	Initial(s)
Candidate No.						5	3	8	4	F	/	1	1	F	Signature

Paper Reference(s)

5384F/11F

Examiner's use only

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Edexcel GCSE

Mathematics (Modular) – 2381

Paper 11 (Non-Calculator)



Foundation Tier

Unit 3

Wednesday 9 November 2011 – Afternoon

Time: 1 hour

Materials required for examination
Ruler graduated in centimetres and millimetres, protractor, compasses, pen, HB pencil, eraser.
Tracing paper may be used.

Items included with question papers
Nil

Instructions to Candidates

In the boxes above, write your centre number, candidate number, your surname, initials and signature.
Check that you have the correct question paper.
Answer ALL the questions. Write your answers in the spaces provided in this question paper.
You must NOT write on the formulae page.
Anything you write on the formulae page will gain NO credit.
If you need more space to complete your answer to any question, use additional answer sheets.

Information for Candidates

The marks for individual questions and the parts of questions are shown in round brackets: e.g. **(2)**.
There are 20 questions in this question paper. The total mark for this paper is 60.
There are 16 pages in this question paper. Any blank pages are indicated.
Calculators must not be used.

Advice to Candidates

Show all stages in any calculations.
Work steadily through the paper. Do not spend too long on one question.
If you cannot answer a question, leave it and attempt the next one.
Return at the end to those you have left out.

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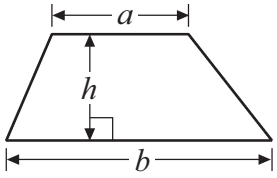
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GCSE Mathematics 2381

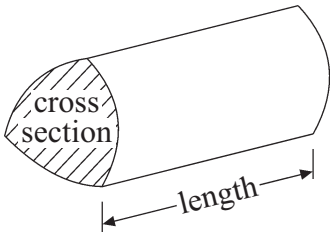
Formulae: Foundation Tier

You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.

Area of trapezium = $\frac{1}{2}(a+b)h$



Volume of prism = area of cross section × length



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Leave blank

Answer ALL TWENTY questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

You must NOT use a calculator.

1. At the beginning of term a school had 960 students.
By the end of term 23 students had left
and 16 students had joined the school.

(a) How many students did the school have at the end of the term?

.....

(2)

$\frac{1}{4}$ of the students in Year 7 went on a trip.

(b) Write $\frac{1}{4}$ as a percentage.

..... %

(1)

Q1

(Total 3 marks)

2. Work out the value of

(i) $4 - 9$

.....

(ii) -3×-5

.....

Q2

(Total 2 marks)

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Leave blank

3. Here is part of a train timetable.

Peterborough	16 18	17 18	18 18	18 59
Whittlesea	–	17 26	–	–
March	16 34	17 37	18 34	19 15
Manea	–	17 45	–	–
Ely	16 53	17 59	18 53	19 33
Cambridge	17 08	18 16	19 08	19 55

A train leaves Whittlesea at 17 26

(a) At what time should this train get to Cambridge?

.....

(1)

The 18 59 train from Peterborough takes more time to get to Cambridge than the 18 18 train from Peterborough.

(b) Work out how many minutes more.

..... minutes

(2)

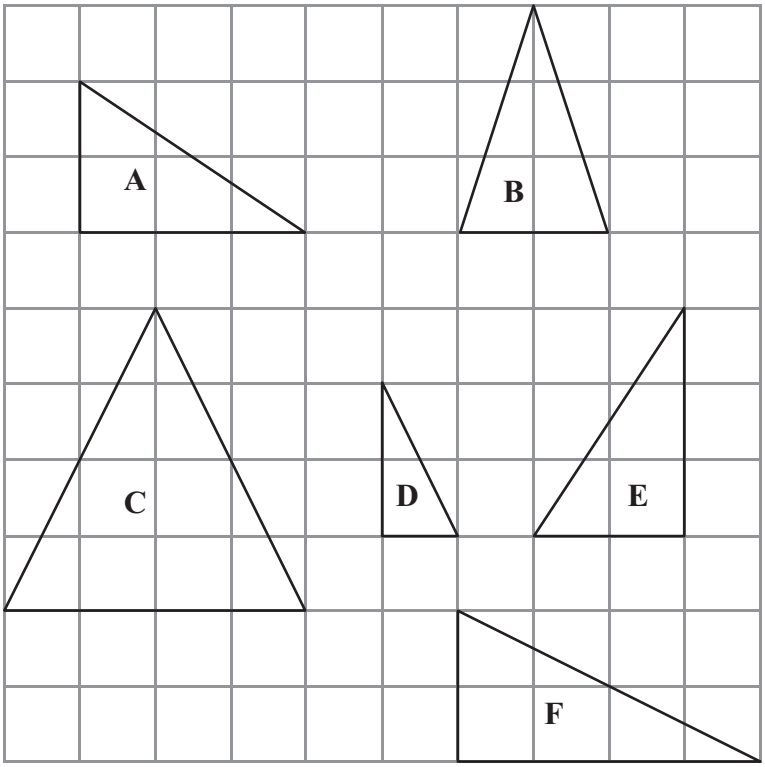
Q3

(Total 3 marks)

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Leave blank

4. Here are some triangles drawn on a square grid.



Two of the triangles are congruent.

(a) Write down the letters of these two triangles.

..... and .....

(1)

One of the triangles is an enlargement of another of the triangles.

(b) Write down the letters of these two triangles.

..... and .....

(1)

Two of the triangles each have one line of symmetry.

(c) Write down the letters of these two triangles.

..... and .....

(1)

Q4

(Total 3 marks)

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Leave blank

5. (a) Work out 564 – 128

.....

(2)

(b) Work out $4 \times 7 \times 5$

.....

(2) **Q5**

(Total 4 marks)

6. (a) Work out $\frac{1}{4}$ of £24

£ .....

(1)

(b) Work out 10% of 400 kg.

..... kg

(1) **Q6**

(Total 2 marks)

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Leave blank

7. Egle thinks of a number.

She subtracts 7 from the number.
She then divides the result by 3

Her answer is 21

What number did Egle first think of?

.....

Q7

(Total 2 marks)

8.

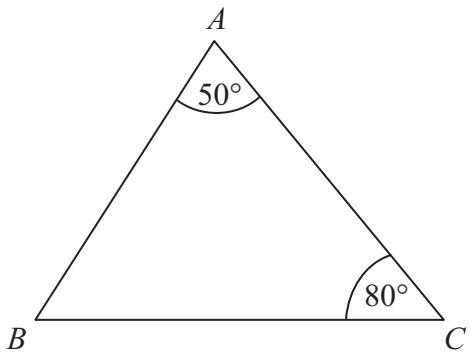


Diagram **NOT** accurately drawn

Triangle *ABC* is isosceles.
Explain why.

.....

.....

Q8

(Total 2 marks)

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Leave blank

9. Bill has two parcels on a trolley.
The first parcel weighs 3.45 kg.
The second parcel weighs 1.8 kg.

Bill cannot put more than a total weight of 10 kg on the trolley.

Bill puts a third parcel on the trolley.

Work out the largest possible weight of the third parcel.

..... kg

(Total 3 marks)

Q9

10. (a) Simplify $h \times h \times h \times h$

.....

(1)

(b) $x = 5$ and $y = \frac{1}{2}$

Work out the value of

(i) $4x + 2y$

.....

(ii) $10 - x^2$

.....

(3)

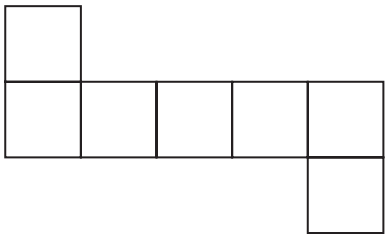
(Total 4 marks)

Q10

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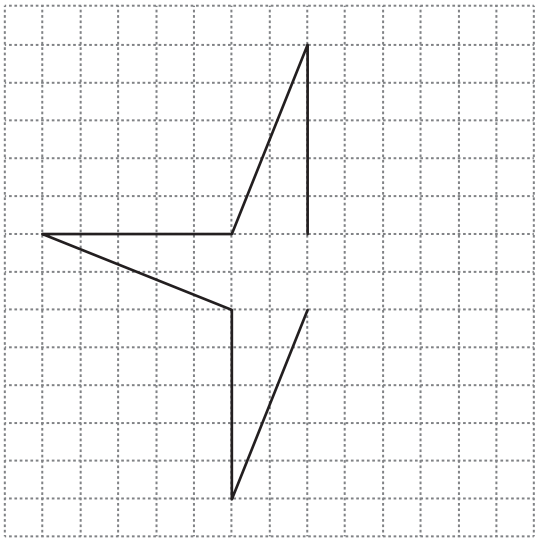
11. (a) This shape has rotational symmetry.



Mark with a cross (×) the centre of rotation.

(1)

(b)



Complete this shape so that it has rotational symmetry of order 4

(1) **Q11**

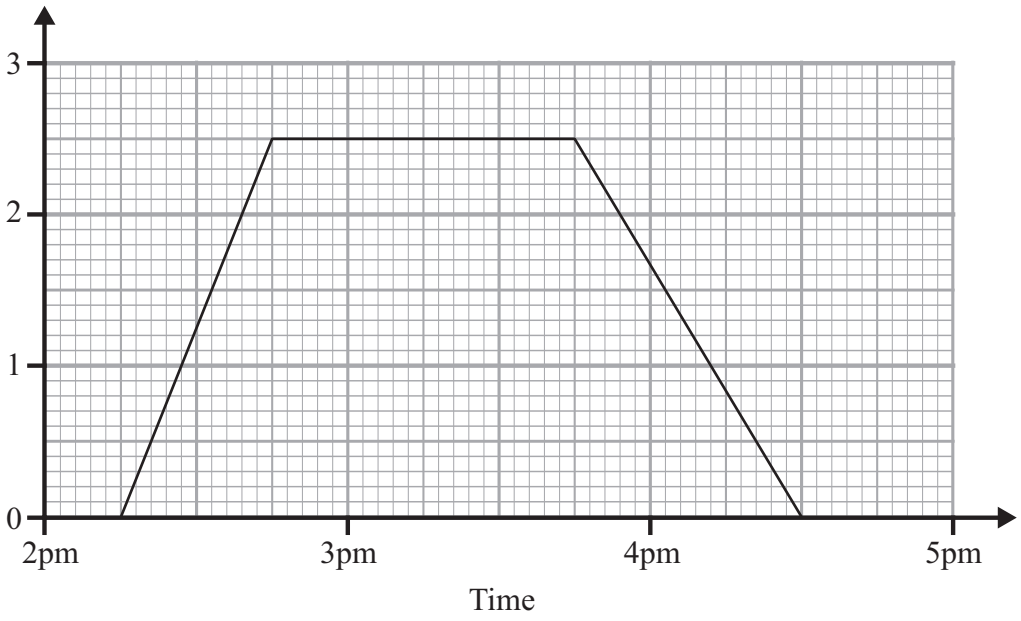
(Total 2 marks)

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12. Janet walked from her home to the library.
She spent some time in the library and then she walked back home.

The distance-time graph shows Janet's complete journey.



(a) At what time did Janet leave home?

.....
(1)

(b) How many minutes did Janet spend in the library?

..... minutes
(1)

(c) How far in total did Janet walk from her home to the library and back home?

..... km
(1)

Q12

(Total 3 marks)

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13.

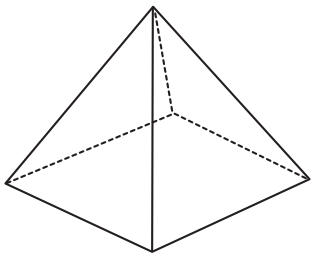


Diagram **NOT** accurately drawn

The diagram shows a square-based pyramid.
Each sloping face of the pyramid is an equilateral triangle.

(a) In the space below, draw a sketch of a net for the square-based pyramid.

(1)

(b) In the space below, use ruler and compasses to **construct** an equilateral triangle with sides of length 5 centimetres.
You must show all construction lines.
One side of the triangle has already been drawn for you.

(2)

(Total 3 marks)

Q13

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Leave blank

14. Theo earns £20 one weekend.
He gives £4 to his brother.

(a) Express £4 as a fraction of £20
Give your answer in its simplest form.

.....
(2)

Theo gives £6 to his mother.

(b) Express £6 as a percentage of £20

..... %
(2)

Theo spent the remaining £10 on bus fares and food.
He spent £1.50 more on bus fares than on food.

(c) How much did he spend on bus fares?

£ .....
(2) **Q14**

(Total 6 marks)

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Leave blank

15. Jim has £x.
Gemma has £4 more than Jim.
Jo has £2 less than Jim.
The total amount of money they have is £23

(a) Use this information to write down an equation in x.

.....
(2)

(b) Solve the equation to find how much money Jim has.

£ .....
(2)

Q15

(Total 4 marks)

16. The length of a car is 4.8 metres.
Kamraiz makes a model of the car.
He uses a scale of 1 : 24



Work out the length, in centimetres, of the model of the car.

..... cm

Q16

(Total 2 marks)

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Leave blank

17. Work out $\frac{2}{3} + \frac{1}{7}$

.....

(Total 2 marks)

Q17

18. Solve $3y + 12 = y + 8$

$y =$ .....

(Total 2 marks)

Q18

19.

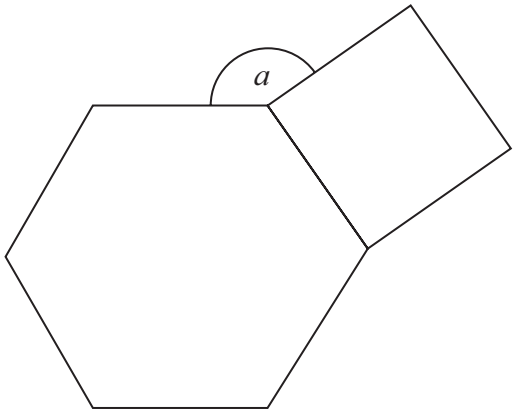


Diagram **NOT** accurately drawn

The diagram shows a regular hexagon and a square.

Calculate the size of the angle *a*.

..... °

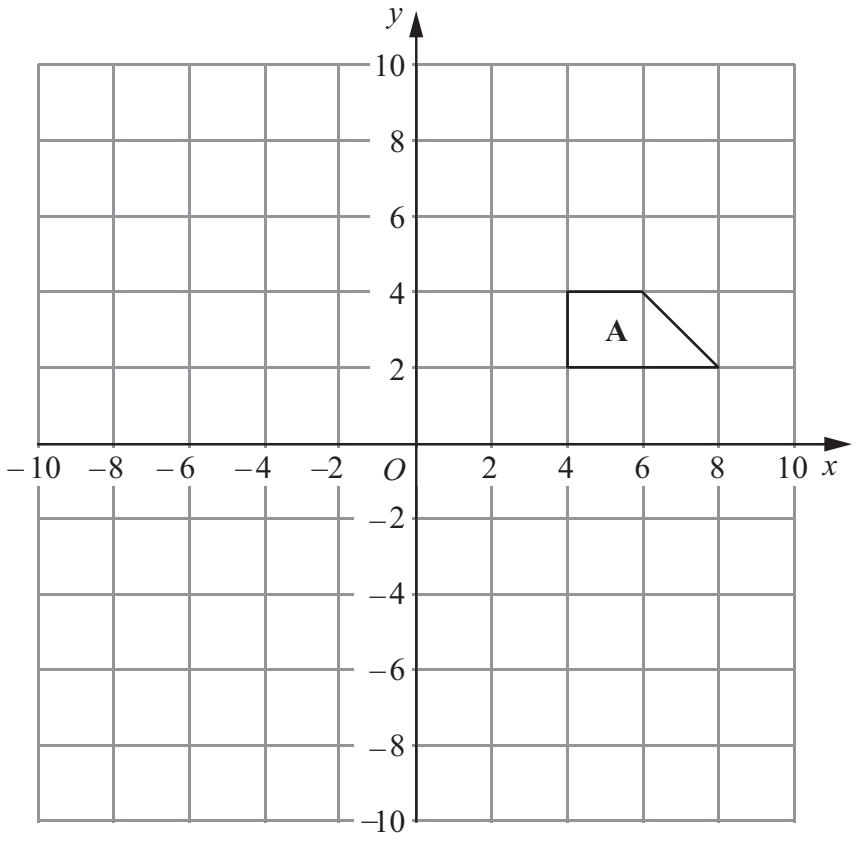
(Total 4 marks)

Q19

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20.



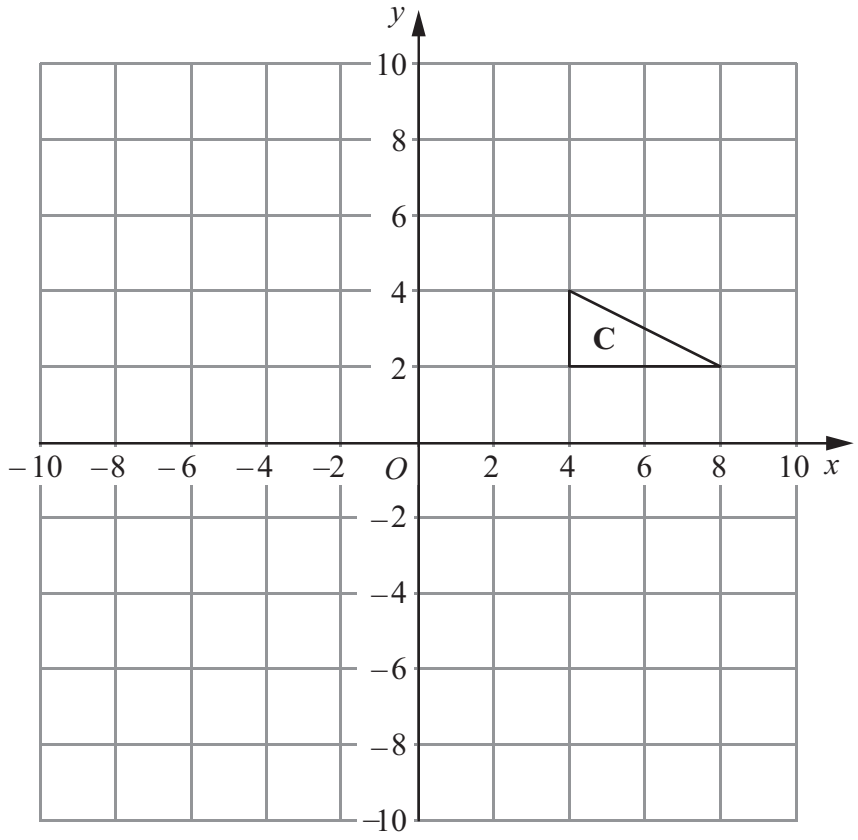
(a) Translate shape **A** by $\begin{pmatrix} -8 \\ -2 \end{pmatrix}$

Label the new shape **B**.

(2)

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Leave blank



(b) Reflect shape **C** in the line $y = x$.
Label the new shape **D**.

(2) **Q20**

(Total 4 marks)

TOTAL FOR PAPER: 60 MARKS

END

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Centre No.						Paper Reference								Surname	Initial(s)
Candidate No.						5	3	8	4	F	/	1	2	F	Signature

Paper Reference(s)

5384F/12F

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Edexcel GCSE

Mathematics (Modular) – 2381

Paper 12 (Calculator)

Foundation Tier



Unit 3

Monday 14 November 2011 – Morning

Time: 1 hour

Materials required for examination
Ruler graduated in centimetres and millimetres, protractor, compasses, pen, HB pencil, eraser, calculator.
Tracing paper may be used.

Items included with question papers
Nil

Instructions to Candidates

In the boxes above, write your centre number, candidate number, your surname, initials and signature.
Check that you have the correct question paper.
Answer ALL the questions. Write your answers in the spaces provided in this question paper.
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Information for Candidates

The marks for individual questions and the parts of questions are shown in round brackets: e.g. **(2)**.
There are 17 questions in this question paper. The total mark for this paper is 60.
There are 16 pages in this question paper. Any blank pages are indicated.
Calculators may be used.
If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.

Advice to Candidates

Show all stages in any calculations.
Work steadily through the paper. Do not spend too long on one question.
If you cannot answer a question, leave it and attempt the next one.
Return at the end to those you have left out.

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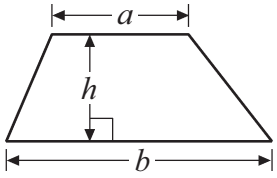
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GCSE Mathematics 2381

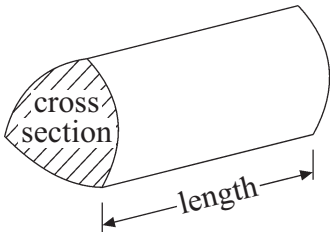
Formulae: Foundation Tier

You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.

Area of trapezium = $\frac{1}{2}(a+b)h$



Volume of prism = area of cross section × length



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Leave blank

Answer ALL SEVENTEEN questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

1. A television programme started at 17 55
The programme was 1 hour 20 minutes long.

(i) At what time did the programme end?

.....

Mumtaz started to watch this programme at 18 34

(ii) How many minutes of the programme did Mumtaz miss?

..... minutes

(Total 3 marks)

Q1

2. (a) Find $\frac{3}{4}$ of £72

£ .....

(1)

(b) Write down two numbers that multiply together to give 0.08
Do **not** use the number 1

..... × ..... = 0.08

(1)

(Total 2 marks)

Q2

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Leave blank

3. In the space below, draw accurately a circle with radius 4.5 cm.
Use the point marked with a cross (×) as the centre of your circle.

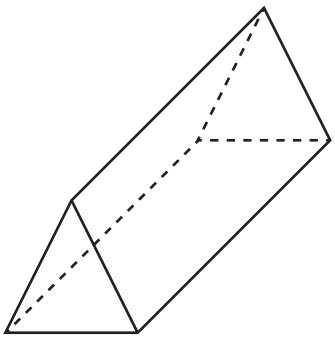
×

Q3

(Total 1 mark)

4. Write down the mathematical name of each of these two 3-D shapes.

(i)



(ii)



(i) .....

(ii) .....

Q4

(Total 2 marks)

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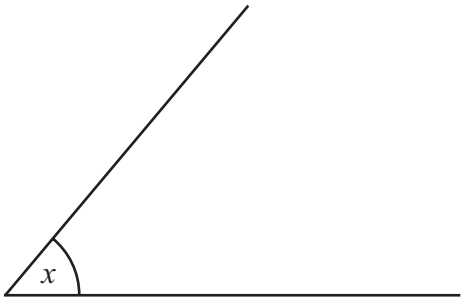
5.



(a) Measure the length of the line AB.

..... cm

(1)



(b) Measure the size of the angle marked x.

..... °

(1)

(c) In the space below, draw an angle of 130° at P.

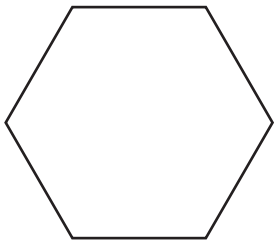
(1) **Q5**

(Total 3 marks)

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Leave blank

6. Here is a regular hexagon.



(a) Draw all the lines of symmetry on this hexagon.

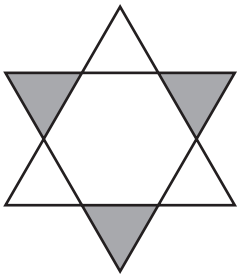
(2)

(b) Write down the order of rotational symmetry of this hexagon.

.....

(1)

Here is another shape.



(c) Write down the order of rotational symmetry of this shape.

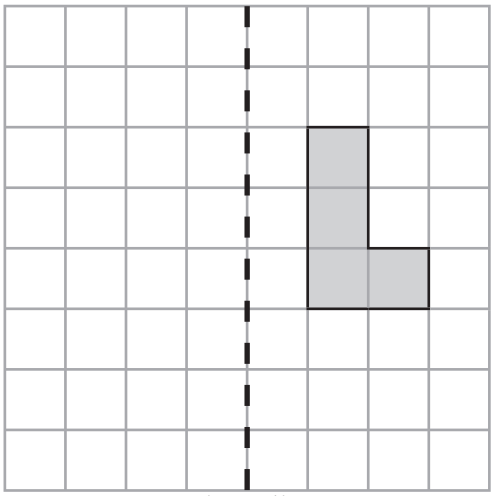
.....

(1)

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Leave blank

(d) Reflect this shape in the mirror line.



Mirror line

(1) **Q6**

(Total 5 marks)

7. Here is an equilateral triangle.

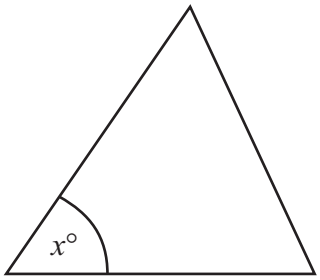


Diagram **NOT** accurately drawn

Write down the value of x.

x = ...

Q7

(Total 1 mark)

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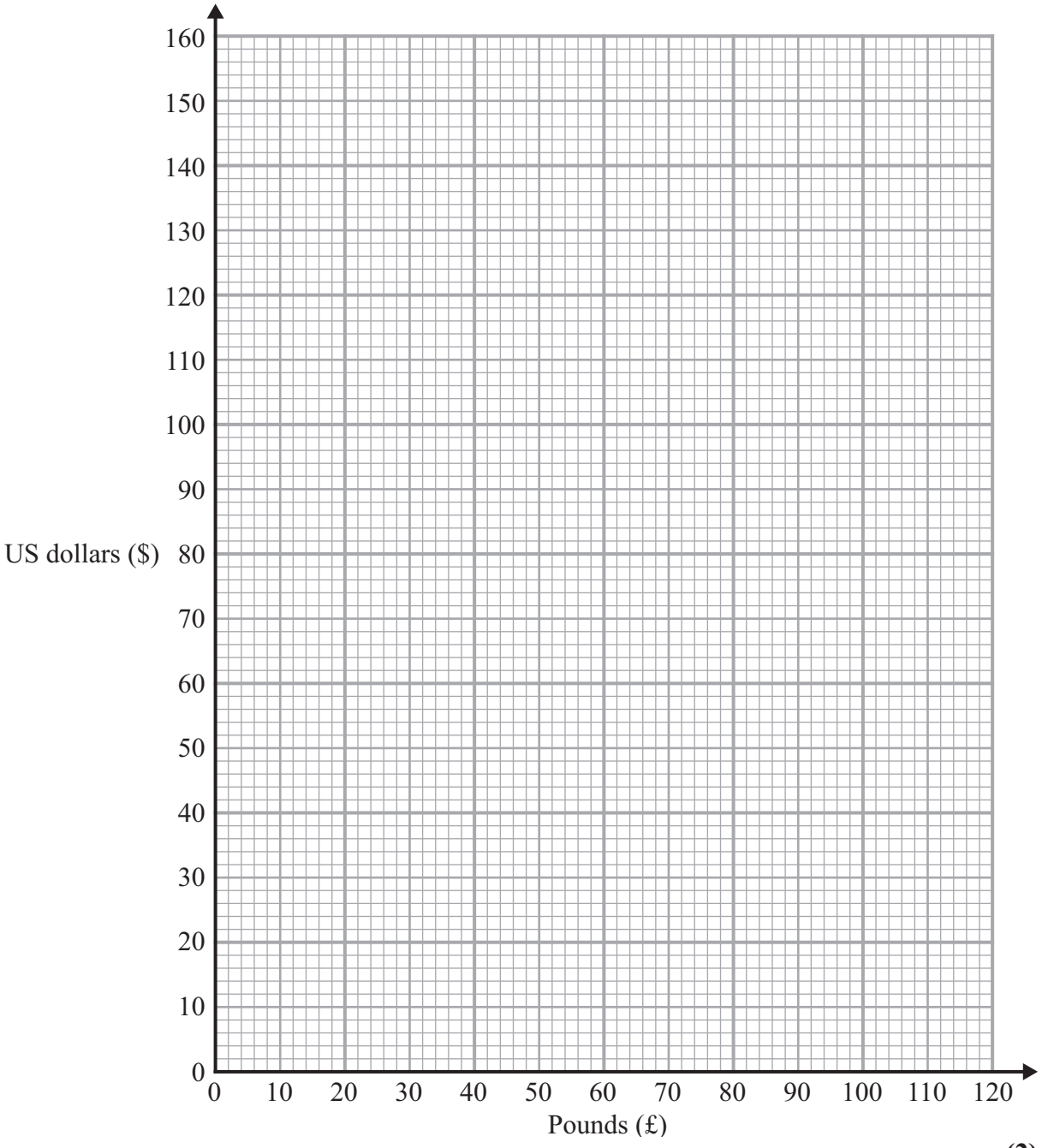
8. The exchange rate to change pounds (£) into US dollars ($) is £1 = $1.50

(a) Use this exchange rate to complete the table below.

Pounds (£)	0	1	2	5	10	20	50	100
US dollars ($)	0	1.50		7.50		30		150

(2)

(b) On the grid, draw a conversion graph for converting between pounds and US dollars.



(2)

(c) Change $100 into pounds (£).

£ .....

(2)

(Total 6 marks)

Q8

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Leave blank

9. (a) Solve $4x = 20$

$x =$ .....

(1)

(b) Solve $\frac{y}{3} = 9$

$y =$ .....

(1) **Q9**

(Total 2 marks)

10. Sharon has x stamps.
Ahmed has three times as many stamps as Sharon.
Billie has six more stamps than Sharon.

(a) Show that the total number of all these stamps is $5x + 6$

(2)

The total number of all these stamps is 41

(b) Work out the number of stamps that Sharon has.

.....

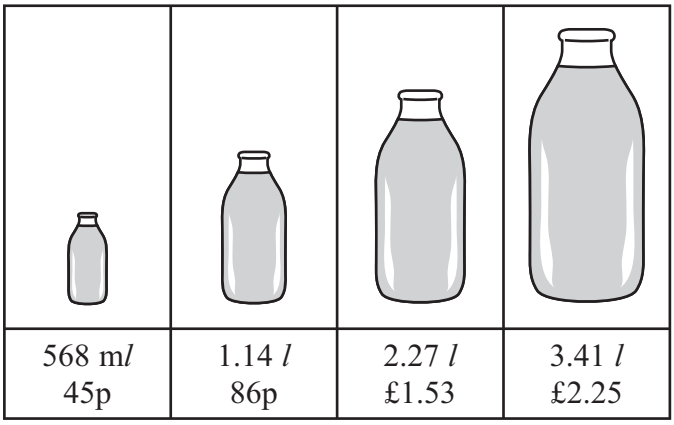
(2) **Q10**

(Total 4 marks)

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Leave blank

11. A supermarket sells milk in four sizes of bottle.



568 m*l*	1.14 *l*	2.27 *l*	3.41 *l*
45p	86p	£1.53	£2.25

Aysha buys one bottle of milk of each size.

(a) Work out the total amount of milk, in litres, that Aysha buys.

..... litres
(2)

Emily buys

one 2.27 *l* bottle of milk
and two 1.14 *l* bottles of milk.

She pays with a £10 note.

(b) How much change should Emily get?

£ .....
(3)

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Leave blank

Simon needs 11 litres of milk.
He pays the least amount of money.

(c) (i) How many bottles of milk of each size does he buy?

.....

(ii) How much does he pay?

£ .....

(3)

Q11

(Total 8 marks)

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Leave blank

12. Ron bought 3 kg of potatoes and 2 kg of carrots.
The total cost was £5.08

Potatoes cost £1.24 per kg.
Work out the cost of 1 kg of carrots.

.....

Q12

(Total 3 marks)

13. Work out the value of $\frac{6^5 \times 6^2}{6^4}$

Give your answer as a power of 6

.....

Q13

(Total 2 marks)

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14.

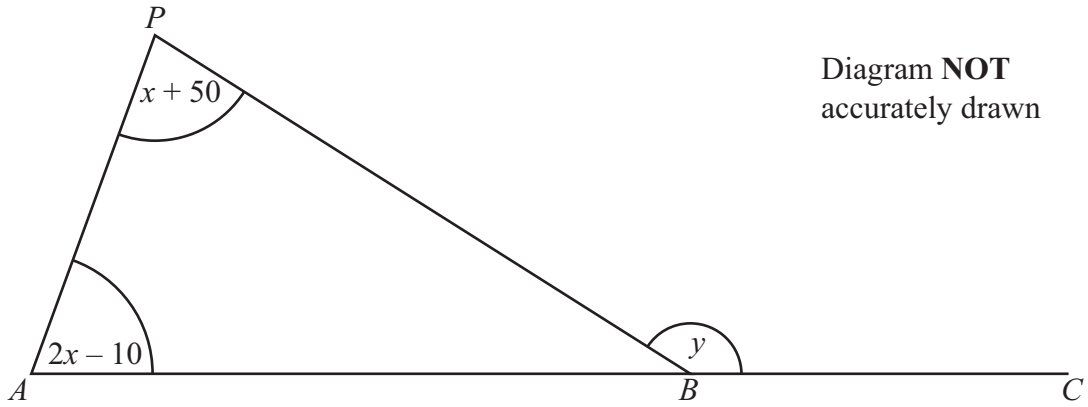


Diagram **NOT** accurately drawn

All angles are measured in degrees.

ABC is a straight line.
Angle *APB* = $x + 50$
Angle *PAB* = $2x - 10$
Angle *PBC* = y

(a) Show that $y = 3x + 40$
Give reasons for each stage of your working.

(3)

(b) Given that $y = 145$,

(i) work out the value of x,

$x =$ .....

(ii) work out the size of the largest angle in triangle *ABP*.

..... °

(4) **Q14**

(Total 7 marks)

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15. Melissa is 13 years old.
Becky is 12 years old.
Daniel is 10 years old.

Melissa, Becky and Daniel share £28 in the ratio of their ages.
Becky gives a third of her share to her mother.

How much should Becky now have?

£ .....

Q15

(Total 4 marks)

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Leave blank

16. The diagram shows a right-angled triangle.

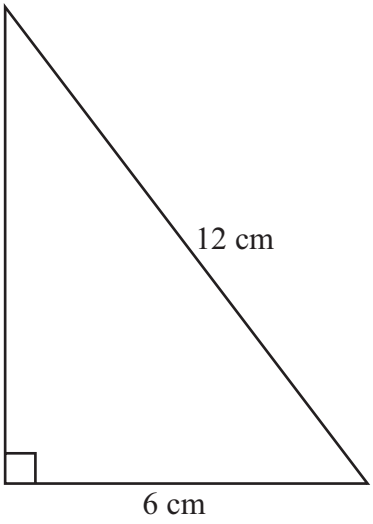


Diagram **NOT** accurately drawn

Calculate the area of the right-angled triangle.
Give your answer correct to 2 decimal places.

..... cm^2 **Q16**

(Total 4 marks)

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Leave blank

17. The exchange rate in London is £1 = €1.14
The exchange rate in Paris is €1 = £0.86

Elaine wants to change some pounds into euros.

In which of these cities would Elaine get the most euros?
You must show all of your working.

.....

Q17

(Total 3 marks)

TOTAL FOR PAPER: 60 MARKS

END

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Mark Scheme (Results)

November 2011

GCSE Mathematics (5384F)
Paper 11F (Non-Calculator)

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A marks: accuracy marks
B marks: unconditional accuracy marks (independent of M marks)

2 Abbreviations

cao – correct answer only
isw – ignore subsequent working
oe – or equivalent (and appropriate)
indep - independent
ft – follow through
SC: special case
dep – dependent

3 No working

If no working is shown then correct answers normally score full marks
If no working is shown then incorrect (even though nearly correct) answers score no marks.

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If there is a wrong answer indicated on the answer line always check the working in the body of the script (and on any diagrams), and award any marks appropriate from the mark scheme.
If working is crossed out and still legible, then it should be given any appropriate marks, as long as it has not been replaced by alternative work.
If it is clear from the working that the "correct" answer has been obtained from incorrect working, award 0 marks. Send the response to review, and discuss each of these situations with your Team Leader.
If there is no answer on the answer line then check the working for an obvious answer.
Any case of suspected misread loses A (and B) marks on that part, but can gain the M marks. Discuss each of these situations with your Team Leader.
If there is a choice of methods shown, then no marks should be awarded, unless the answer on the answer line makes clear the method that has been used.

5 Follow through marks

Follow through marks which involve a single stage calculation can be awarded without working since you can check the answer yourself, but if ambiguous do not award.

Follow through marks which involve more than one stage of calculation can only be awarded on sight of the relevant working, even if it appears obvious that there is only one way you could get the answer given.

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It is appropriate to ignore subsequent work when the additional work does not change the answer in a way that is inappropriate for the question: e.g. incorrect canceling of a fraction that would otherwise be correct
It is not appropriate to ignore subsequent work when the additional work essentially makes the answer incorrect e.g. algebra.
Transcription errors occur when candidates present a correct answer in working, and write it incorrectly on the answer line; mark the correct answer.

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Probability answers must be given a fractions, percentages or decimals. If a candidate gives a decimal equivalent to a probability, this should be written to at least 2 decimal places (unless tenths).
Incorrect notation should lose the accuracy marks, but be awarded any implied method marks.
If a probability answer is given on the answer line using both incorrect and correct notation, award the marks.
If a probability fraction is given then cancelled incorrectly, ignore the incorrectly cancelled answer.

8 Linear equations

Full marks can be gained if the solution alone is given on the answer line, or otherwise unambiguously indicated in working (without contradiction elsewhere). Where the correct solution only is shown substituted, but not identified as the solution, the accuracy mark is lost but any method marks can be awarded.

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Unless allowed by the mark scheme, the marks allocated to one part of the question CANNOT be awarded in another.

10 Money notation

Accepted with and without the “p” at the end.

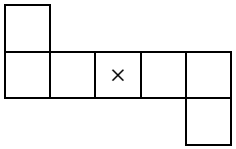
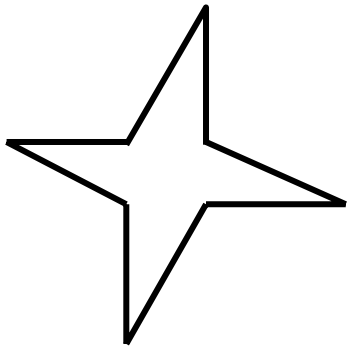
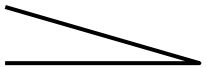
11 Range of answers

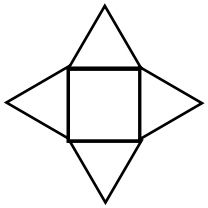
Unless otherwise stated, when any answer is given as a range (e.g 3.5 – 4.2) then this is inclusive of the end points (e.g 3.5, 4.2) and includes all numbers within the range (e.g 4, 4.1).

5384F_11F					
Question		**Working**	**Answer**	**Mark**	**Notes**
1	(a)	960 – 23 + 16	953	2	M1 for attempt to subtract 23 and add 16 **or** 960 – 23 + 16 oe A1 cao
	(b)		25	1	B1 cao
2	(i)		– 5	2	B1 cao
	(ii)		15		B1 cao
3	(a)		18 16	1	B1 accept 18 16 or 6 16 pm
	(b)	19 55 19 08 18 59 – 18 18 – 56 50 **or** 18 59 to 19 00 is 1 minutes 19 00 to 19 55 is 55 minutes 1 + 55 = 56 18 18 to 18 30 is 12 minutes 18 30 to 19 00 is 30 minutes 19 00 to 19 08 is 8 minutes 12 +30 + 8 = 50 **or** 18 59 1955 – 18 18 – 19 08 41 47 47 – 41 =	6	2	M1 for (19 55 – 18 59) and (19 08 – 18 18) seen or 56 or 50 A1 cao **or** M1 for attempt to add on from 18 59 to 19 55 and 18 18 to 19 08 or 56 or 50 A1 cao **or** M1 for (18 59 – 18 18) and (19 55 – 19 08) or 41 or 47 A1 cao

5384F_11F					
Question		**Working**	**Answer**	**Mark**	**Notes**
4	(a)		A and E	1	B1 cao
	(b)		D and F	1	B1 cao
	(c)		B and C	1	B1 cao
5	(a)	$\begin{array}{r} {\scriptstyle 5}\not{5}\,6\,{}^{1}4 \\ -\,1\,2\,\;8 \\ \hline 4\,3\,6 \end{array}$ $\begin{array}{r} 5\,6^{1}4 \\ 1\not{2}^{3}\,8\;- \\ \hline 4\,3\,6 \end{array}$	436	2	M1 for evidence of a correct method of decomposition or equal addition or use of complement to 200 **or** 6 seen in the units column of their answer A1 cao
	(b)	4 × 7 = 28 × 5 or 4 × 35 (7 × 5) or 4 × 5 = 20 × 7	140	2	M1 '4 × 7' × 5 or 4 × '7 × 5' or '4 × 5' × 7 A1 cao
6	(a)		6	1	B1 cao
	(b)		40	1	B1 cao
7		21 × 3 = 63 63 + 7 = 70	70	2	M1 for 21 × 3 or 63 seen or $(x - 7) \div 3$ or "21 × 3" + 7 seen but not 21 + 7 A1 cao
8			Two angles equal as $B = 50°$	2	B2 for angle $B = 50$ **and** 'two angles equal' or angle A = angle B (B1 for use of 180, e.g. 180 – 50 – 80 or $B = 50$) **NB** accept 50^{o} if just seen on the diagram in the correct place

5384F_11F					
Question		**Working**	**Answer**	**Mark**	**Notes**
9		3.45 + 1.8 = 5.25 10 – 5.25 = 4.75 **or** 10 – 3.45 = 6.55 "6.55" – 1.8 = **or** 10 – 1.8 = 7.2 "7.2" – 3.45 =	4.75	3	M1 3.45 + 1.8 (= 5.25) M1 10 – '5.25' A1 cao **or** M1 for 10 – 3.45 (= 6.55) M1 for "6.55" – 1.8 A1 cao **or** M1 for 10 – 1.8 (= 7.2) M1 for "7.2" – 3.45 A1 cao SC: B2 for an answer of 5.47 **or:** B1 for 4.53 seen in working if M0 scored
10	(a)		h^4	1	B1 cao
	(b)(i)	4 × 5 + 2 × ½	21	3	M1 for substituting 5 and ½ correctly or sight of 4 × 5 and 2 × ½ A1 cao
	(ii)		– 15		B1 cao

5384F_11F					
Question		**Working**	**Answer**	**Mark**	**Notes**
11	(a)			1	B1 for cross placed inside the correct square but not on the side of the square
	(b)			1	B1 for completing shape correctly by adding appropriate lines. See diagram at end 
12	(a)		2 15 pm	1	B1 2 15 pm or 14 15 accept 2 15 or 2:15
	(b)		60	1	B1 cao
	(c)		5	1	B1 cao

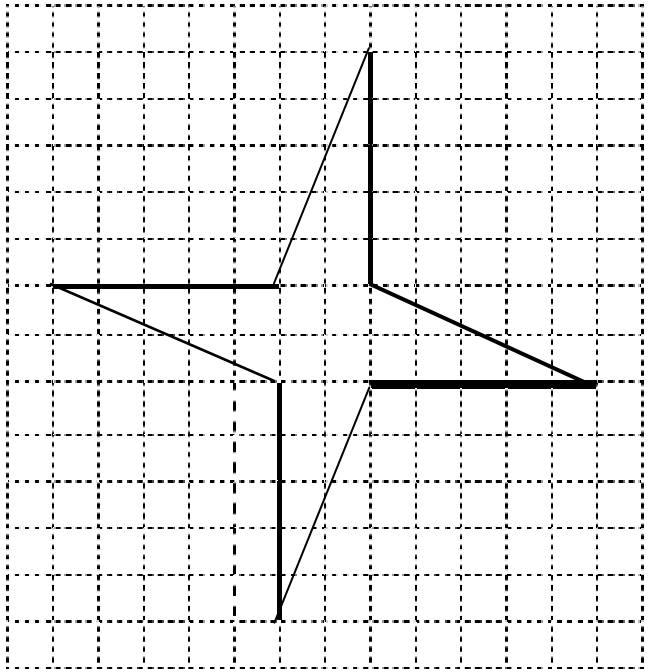
5384F_11F					
Question		**Working**	**Answer**	**Mark**	**Notes**
13	(a)		Correct net	1	B1 for any net that contains a reasonable attempt at a square and 4 triangles that could fold to make a square based pyramid. Condone freehand sketches as long as the meaning is clear
	(b)		Correct drawing	2	M1 constructing intersecting arcs of equal radius use overlay A1 correct triangle with appropriate arcs (SC: B1 correct triangle drawn within guidelines of overlay if M0 scored) (NB: guidelines allow for 2mm tolerance)

5384F_11F					
Question		**Working**	**Answer**	**Mark**	**Notes**
14	(a)	$\frac{4}{20}$	$\frac{1}{5}$	2	M1 $\frac{4}{20}$ oe A1 cao SC B1 for $\frac{16}{20}$ oe
	(b)	$\frac{6}{20} \times 100$ or $\frac{6}{20} = \frac{5 \times 6}{5 \times 20}$	30	2	M1 $\frac{6}{20} \times 100$ oe A1 cao or M1 $\frac{6}{20} = \frac{5 \times 6}{5 \times 20}$ A1 cao
	(c)	10 – 1.50 = 8.50 8.50 ÷ 2 = 4.25	5.75	2	M1 10 – 1.5(0) = 8.5(0) and "8.5(0)" ÷ 2 or (10 +1.5(0) ="11.5(0)" ÷ 2 or $2x \pm 1.5(0) = 10$ oe or 4.25 seen A1 cao
15	(a)	Gemma $x + 4$ Jo $x - 2$ $x + 4 + x - 2 + x = 23$	$3x + 2 = 23$	2	M1 for $x + 4$ and $x - 2$ seen (ignore £ signs) A1 $x + 4 + x - 2 + x = 23$ oe accept $x = 7$ even if seen only in (b)
	(b)	$3x + 2 = 23$ $3x = 21$	7	2	M1 for isolating terms in x and number terms on each side of an equation,'$3x = 21$' ft from $ax + b = 23$ in (a) where $a \neq 0$ or 1 A1 ft from their answer to (a)
16		4.8 ÷ 24	20	2	M1 for 4.8 ÷ 24 or 480 ÷ 24 or sight of digits 20 A1 cao

5384F_11F					
Question		**Working**	**Answer**	**Mark**	**Notes**
17		$\frac{2}{3}+\frac{1}{7}=\frac{14}{21}+\frac{3}{21}$ | | 2 | 3 | | 1 | | 3 | | 7 | 14 | 21 |	$\frac{17}{21}$	2	M1 for a suitable common denominator (multiple of 21), and at least one of two fractions correct NB sight of $\frac{3}{21}$ oe or $\frac{14}{21}$ oe alone is **not** sufficient A1 $\frac{17}{21}$ oe OR Attempt to use decimals, must use at least 2 dp M1 0.66 + 0.14 A1 0.80952 **or** M1 for table structure correct with all cells correct A1 for $\frac{17}{21}$
18		$3y + 12 = y + 8$ $3y - y = 8 - 12$	-2	2	M1 for an intention to attempt to take variables to one side **or** numbers to the other or $3y - y = 8 - 12$ or $2y = -4$ seen A1 cao

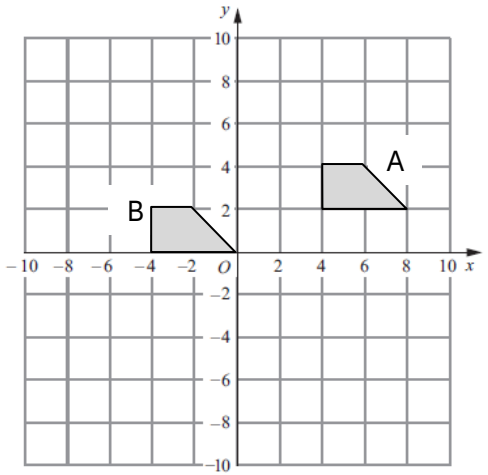
5384F_11F					
Question		**Working**	**Answer**	**Mark**	**Notes**
19		Ext angle = $\frac{360}{6}$ Int angle = 180 – 60 120 + 90 = 210 360 – 210 = 150 **or** 180 × 4 = 720 720 ÷ 6 =120 120 + 90 = 210 360 – 210 = 150 or Ext angle hexagon = $\frac{360}{6}$ Ext angle square = $\frac{360}{4}$ or 180 – 90 90 + 60	150	4	M1 for (Ext angle) = $\frac{360}{6}$ (= 60) seen M1for (Int angle) = 180 – '60' M1 (dep on at least M1) 360 – ('120' + '90') A1 cao **SC** B2 for answer of 210 given **Or** M1 for 180 × 4 (= 720) M1 for '720' ÷ 6 (=120) M1 (dep on at least M1) 360 – ('120' + 90 A1 cao **Or** M1 (Ext angle hexagon) = $\frac{360}{6}$ M1 (Ext angle square) = $\frac{360}{4}$ or (180 – 90) or 90º seen as exterior angle on diagram M1 (dep on at least M1) '90' + "60" A1 cao
20	(a)	Vertices at (–4, 2), (–4, 0), (0, 0) and (–2, 2)	Correct translation	2	M1 any translation A1 cao
	(b)	Vertices at (4, 4), (2, 4) and (2, 8)	Correct reflection	2	M1 sight of line $y = x$ drawn or a correct reflection in $y = -x$ A1 cao

Diagram for Question 11(b)

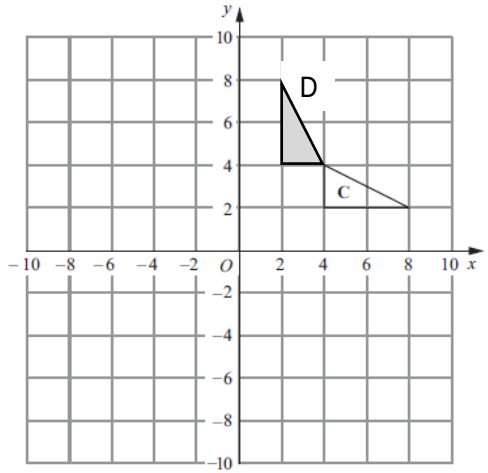


Diagrams for Question 20

(a)



(b)



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5384F_12F					
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1	(i)	17 55 + 1 20 OR 17 55 + 5 = 18 00 18 00 + 1 = 19 00 19 00 + 15 = 19 15	19 15	3	M1 for 17 55 + 1 20 oe or a complete build up method A1 for 19 15 or 7 15pm oe
	(ii)	18 34 – 17 55	39		B1 for 39 or ft19 54 – '19 15'
2	(a)		54	1	B1 cao
	(b)		Two numbers	1	B1 for two numbers that multiply to give 0.08 (1 must not be used)
3			Circle	1	B1 for circle radius 4.5 cm drawn within guidelines tolerance ±2mm
4	(i)		Triangular prism	2	B1 accept mis-spellings
	(ii)		Sphere		B1 accept mis-spellings
5	(a)		8	1	B1 for 8 cm ±2mm
	(b)		50	1	B1 for angle in range 45 – 55
	(c)		Angle drawn	1	B1 for angle drawn within guidelines (allow an angle of 130º accurately drawn anywhere ±2 degrees)

5384F_12F					
Question		**Working**	**Answer**	**Mark**	**Notes**
6	(a)		Lines of symmetry	2	B2 for exactly6 lines of symmetry (B1 for 1 line of symmetry)
	(b)		6	1	B1 cao
	(c)		3	1	B1 cao
	(d)		Reflection	1	B1 cao
7			60	1	B1 cao
8	(a)		3, 15, 75	2	B2 for all 3 correct (B1 for 1 or 2 correct)
	(b)		Straight line from the origin to (100,150)	2	M1 for straight line drawn from (0, 0) or which when produced would pass through (0, 0) A1 for a single line from the origin to (100,150) tolerance one 2mm square (SC If M0 then B1 for plotting any two points correctly ft table)
	(c)		65 to 68	2	B2 for 65 – 68 OR M1 for a horizontal line drawn from 100to meet the graph oe A1 for 65 – 68 or ft their line tolerance one 2mm square OR M1 for 100 ÷ 1.50 A1 for 65 – 68

5384F_12F					
Question		**Working**	**Answer**	**Mark**	**Notes**
9	(a)	20 ÷ 4	5	1	B1 cao
	(b)	9 × 3	27	1	B1 cao
10	(a)	$3x + x + x + 6$	$5x + 6$	2	M1 for $3x + x + x + 6$ A1 for $5x + 6$ (B1 for (x), $3x$ or$x + 6$ seen)
	(b)	'$5x + 6$' = 41	7	2	M1 for '$5x + 6$' = 41or '$5x$' = 41 – '6' or (41 – '6') ÷ '5' or 7, 21 and 13 seen A1 cao
11	(a)	0.568+1.14+2.27+3.41	7.388	2	M1 for conversion of 568 to 0.568 or '0.568'+1.14+2.27+3.41**or** 1140 or 2270 or 3410 or 568+'1140'+'2270'+'3410' A1 cao
	(b)	1.53+2×0.86=3.25 10-3.25=	6.75	3	M1 for 1.53+2×0.86or 3.25 oe M1(dep) for 10 – '1.53+2×0.86' oe A1 for 6.75 (SC B2 for 7.61)
	(c)(i)	2×2.27 and 2×3.41	2 of 2.27 and 2 of 3.41	3	M2 for a combination of different types of bottlewith total ≥ 11 litres (M1 for a combination of different types of bottle**or** one type of bottle with total ≥11 litres)
	(ii)	£1.53×2 + £3.41×2	7.56		A1 cao

5384F_12F					
Question		**Working**	**Answer**	**Mark**	**Notes**
12		5.08 – 1.24 × 3 = 1.36 1.36 ÷ 2	£0.68 or 68p	3	M1 for 1.24 × 3 or 3.72 oe seen M1 (indep) for (5.08 – '3.72') ÷ 2 oe A1 for £0.68 or 68p accept £0.68p
13		$\frac{6^7}{6^4}$ or $6^1 \times 6^2$ or $\frac{6^5}{6^2}$	6^3	2	M1 for $\frac{6^7}{6^4}$ or $6^1 \times 6^2$ or $\frac{6^5}{6^2}$ A1 cao (SC B1 for answer 216 if M0 scored)
14	(a)	$2x – 10 + x + 50$ (ext. angle of a triangle = sum of opp. int. angles) OR $180 – (2x – 10 + x + 50) = 140 – 3x$ (sum of the angles ina triangle = 180) $180 – (140 – 3x)$ (sum of angles on a straight line = 180)	Show results with reasons	3	M1 for $2x – 10 + x + 50$ or $2x + x$ and $50 – 10$ A1 for completing the algebra to complete the proof and showing $y = 3x+40$ B1 for 'ext. angle of a triangle = sum of opp. angles' OR M1 for $180 – (2x – 10 + x + 50)$ or $140 – 3x$ seen A1 for completing the algebra to complete the proof and showing $y = 3x+40$ B1 for 'sum of angles in atriangle = 180' oe **and** 'sum of angles on a straight line = 180' oe
	(b)(i)	$3x = 145 – 40 = 105$ $105 \div 3$	35	4	M1 for clear attempt to subtract 40 from both sides of the equation **or** divide all 3 terms by 3 or $(3x=)$ 145 – 40 or 105 seen A1 cao
	(ii)	35 + 50 = 85 2 × 35 – 10 = 60 180 – 145 = 35	85		M1(ft)for 2×'35'–10 or '35'+50 **or** 180–145 **or** can be implied by sight of 85 or 60**or** for substituting '35' in order to find at least one angle implied by sight of 85 or 60 A1 for 85or ft for '35' provided 'x'<47

5384F_12F					
Question		**Working**	**Answer**	**Mark**	**Notes**
15		2800 ÷ (13+12+10)=80p/share 80 × 12 = 960 $960 \times \frac{2}{3}$	6.40	4	M1 for 2800÷(13+12+10) or 28÷(13+12+10) or 80 or 0.8 seen OR 10.4(0) or 8 oe OR $\frac{13}{35}$ or$\frac{12}{35}$ or$\frac{10}{35}$ oe seen M1 for '80'×12 or '0.8'×12 OR 960 or 9.6(0) seen OR $\frac{12}{35}$×2800 or$\frac{12}{35}$×28 oe M1(indep) for× $\frac{2}{3}$ oe A1 for 6.40 or 640p (accept 6.4) SC B2 for answer of 10 supported by working
16		$12^2 = h^2 + 6^2$ $h = \sqrt{(144-36)} = \sqrt{108} = 10.392$ area = ½ × 6 × 10.392	31.17 to 31.18	4	M1 for $12^2 = h^2 + 6^2$ or (h^2=) $12^2 - 6^2$ M1 for √(144-36) (=10.392) M1 (indep) for ½ × 6 × 'height' A1 for 31.17 to 31.18
17		1 ÷ 1.14 = 0.877… is worse than 0.86 OR 1 ÷ 0.86 = 1.162… is better than 1.14 OR Change (say) £100 1.14×100 = 114 $100 \times \frac{1}{0.86} = 116.28$	Paris since 1.16…>1.14	3	M1 for an attempted conversion using 1.14 or 0.86 A1 for arriving at two comparable amounts of money in the same currency A1 for Paris with correct figures

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Paper Reference(s)

5384F/11F

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Edexcel GCSE

Mathematics (Modular) – 2381

Paper 11 (Non-Calculator)



Foundation Tier

Unit 3

Monday 6 June 2011 – Afternoon

Time: 1 hour

Materials required for examination
Ruler graduated in centimetres and millimetres, protractor, compasses, pen, HB pencil, eraser.
Tracing paper may be used.

Items included with question papers
Nil

Instructions to Candidates

In the boxes above, write your centre number, candidate number, your surname, initials and signature.
Check that you have the correct question paper.
Answer ALL the questions. Write your answers in the spaces provided in this question paper.
You must NOT write on the formulae page.
Anything you write on the formulae page will gain NO credit.
If you need more space to complete your answer to any question, use additional answer sheets.

Information for Candidates

The marks for individual questions and the parts of questions are shown in round brackets: e.g. **(2)**.
There are 18 questions in this question paper. The total mark for this paper is 60.
There are 20 pages in this question paper. Any blank pages are indicated.
Calculators must not be used.

Advice to Candidates

Show all stages in any calculations.
Work steadily through the paper. Do not spend too long on one question.
If you cannot answer a question, leave it and attempt the next one.
Return at the end to those you have left out.

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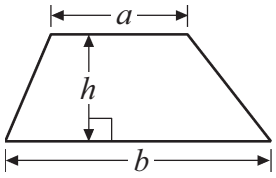
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GCSE Mathematics

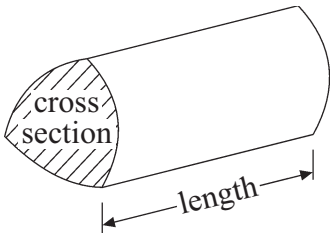
Formulae: Foundation Tier

You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.

Area of trapezium = $\frac{1}{2}(a+b)h$



Volume of prism = area of cross section × length



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Leave blank

Answer ALL EIGHTEEN questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

You must NOT use a calculator.

1. (a) Work out 4×0.6

.....

(1)

(b) Work out 2.58×10

.....

(1)

(c) Work out $2.1 \div 3$

.....

(1)

(d) Work out $380 \div 1000$

.....

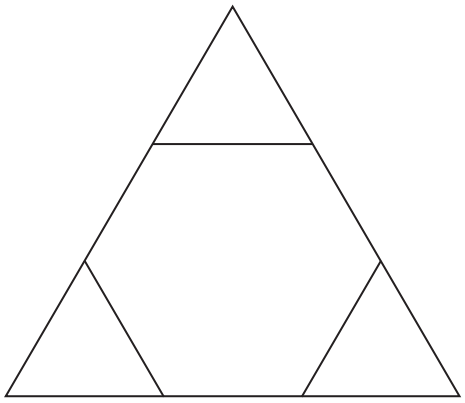
(1)

Q1

(Total 4 marks)

Leave blank

2. Here is a shape.

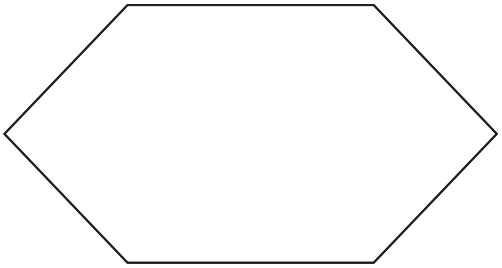


(a) Write down the order of rotational symmetry of this shape.

.....

(1)

Here is a hexagon.



(b) On the shape, draw all the lines of symmetry.

(2) **Q2**

(Total 3 marks)

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Leave blank

3. Simone and Barry use this rule to work out their pay.

Pay = £6.20 × number of hours worked

Simone works for 4 hours.

(a) Work out her pay.

£ .....

(2)

Barry's pay is £15.50

(b) How many hours did he work?

..... hours

(2)

Q3

(Total 4 marks)

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Leave blank

4. There are 1485 people in a school.
737 of these people are male.

(a) Work out the number of females in the school.

.....

(2)

246 pupils and 13 teachers are going on a school trip.
They are going to hire 5 coaches for the trip.
Each coach has 53 seats for passengers.

(b) Work out the total number of empty seats.

.....

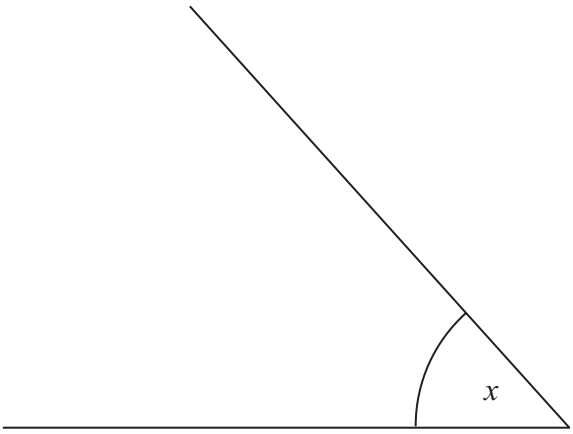
(3) **Q4**

(Total 5 marks)

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Leave blank

5.



(a) Measure the size of the angle marked x.

.....°

(1)

(b) At A, draw accurately an angle of 150°

A

(1)

The length of each side of a triangle is 5 cm.

(c) Write down the size of each angle of this triangle.

.....°

(1) **Q5**

(Total 3 marks)

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Leave blank

6. The table shows the temperature at different times on one day in London.

Time of day	Temperature
2 am	−1°C
6 am	−3°C
10 am	5°C
2 pm	7°C
6 pm	4°C
10 pm	3°C

(a) At which of these times was the temperature lowest?

.....

(1)

(b) Work out the difference between the highest temperature and the lowest temperature.

.....°C

(1)

(c) Between two of these times the temperature fell by 3°C.
Which two times?

..... and .....

(1)

Q6

(Total 3 marks)

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Leave blank

7. Emily went on a journey in her car.

At the start of her journey, the distance reading was 12 478 miles.
At the end of her journey, the distance reading was 12 642 miles.

Emily was paid 40p for each mile of her journey.

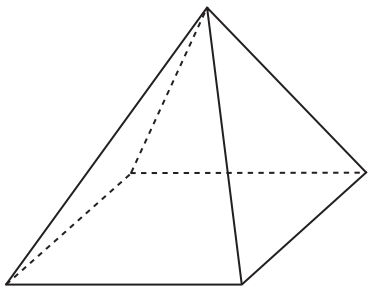
Work out the total amount Emily was paid.

£ .....

Q7

(Total 4 marks)

8. Here is a diagram of a solid 3-D shape.



Write down the mathematical name of the 3-D shape.

.....

Q8

(Total 1 mark)

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Leave blank

9.

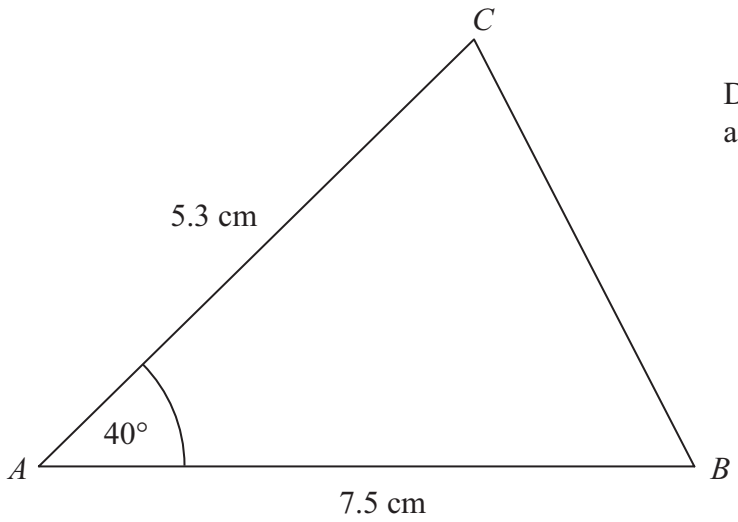


Diagram **NOT** accurately drawn

Make an accurate drawing of this triangle.

The line *AB* has already been drawn for you.



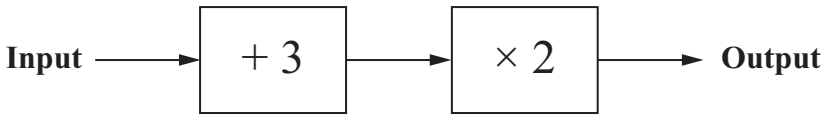
Q9

(Total 2 marks)

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10. Here is a two-stage number machine.



The machine adds 3 and then multiplies by 2

Complete the table.

Input	Output
2	10
5	16
7	.....
.....	36

Q10

(Total 2 marks)

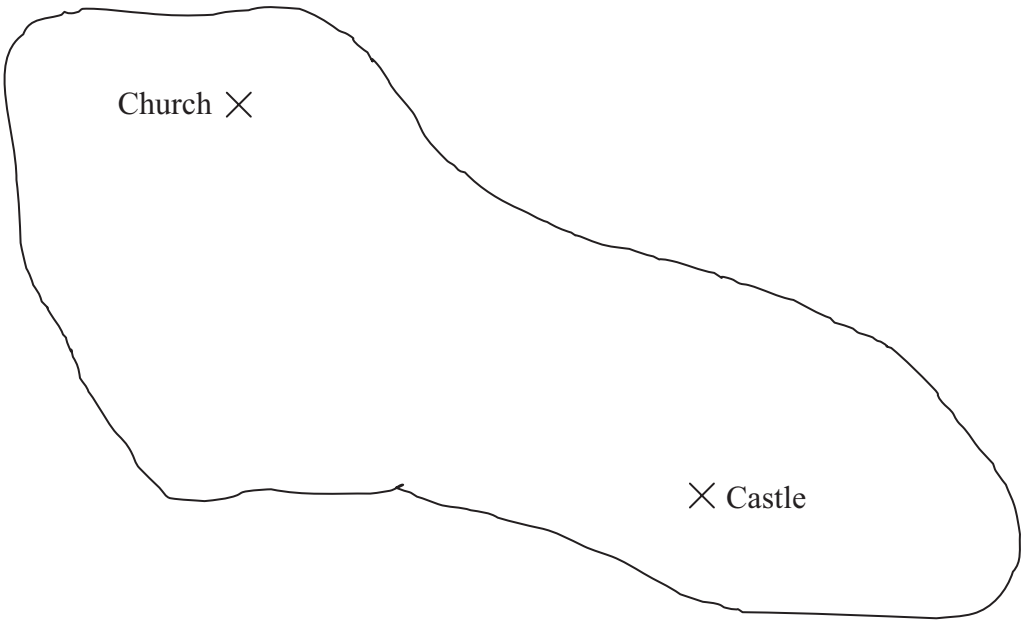
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11. (a) Simplify the ratio 8 : 22

.....

(1)

The diagram shows part of a map.
It shows the positions of a castle and a church.



The scale of the map is 1:10 000

(b) Work out the real distance between the castle and the church.
Give your answer in metres.

..... m

(2)

Q11

(Total 3 marks)

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Leave blank

12. Some students went to the cinema.
Each student watched film A or film B or film C.

$\frac{3}{8}$ of the students watched film A.

40% of the students watched film B.

What fraction of the students watched film C?

.....

(Total 3 marks)

Q12

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13.

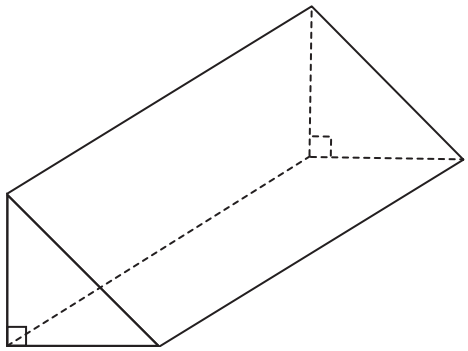


Diagram **NOT** accurately drawn

The diagram shows a triangular prism.
The cross-section of the prism is a right angled isosceles triangle.

(a) In the space below, draw a sketch of a net for the triangular prism.

(2)

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Leave blank

(b) In the space below, use a ruler and compasses to **construct** the perpendicular bisector of the line AB.

You must show all construction lines.



(2) **Q13**

(Total 4 marks)

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Leave blank

14. $H = 2a + 3b$
$a = 5$
$b = -1$

(a) Work out the value of H.

.....
(2)

$P = 3h^2$
$h = -4$

(b) Work out the value of P.

.....
(2)

(c) Make x the subject of the formula $y = \dfrac{x + 2}{3}$

.....
(2) **Q14**

(Total 6 marks)

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15. (a) Work out the value of 2^4

.....

(1)

(b) Simplify $t \times t \times t$

.....

(1)

(c) Simplify fully $\dfrac{n^9}{n^3 \times n^2}$

.....

(2)

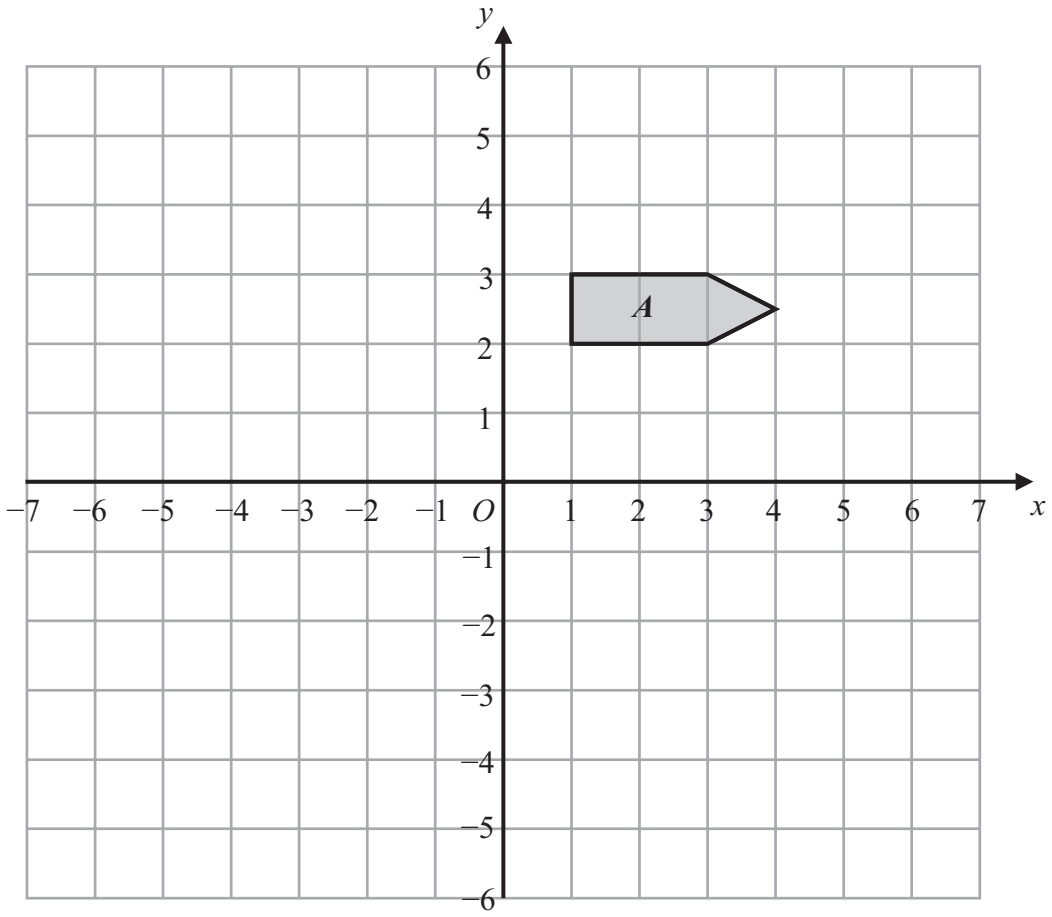
Q15

(Total 4 marks)

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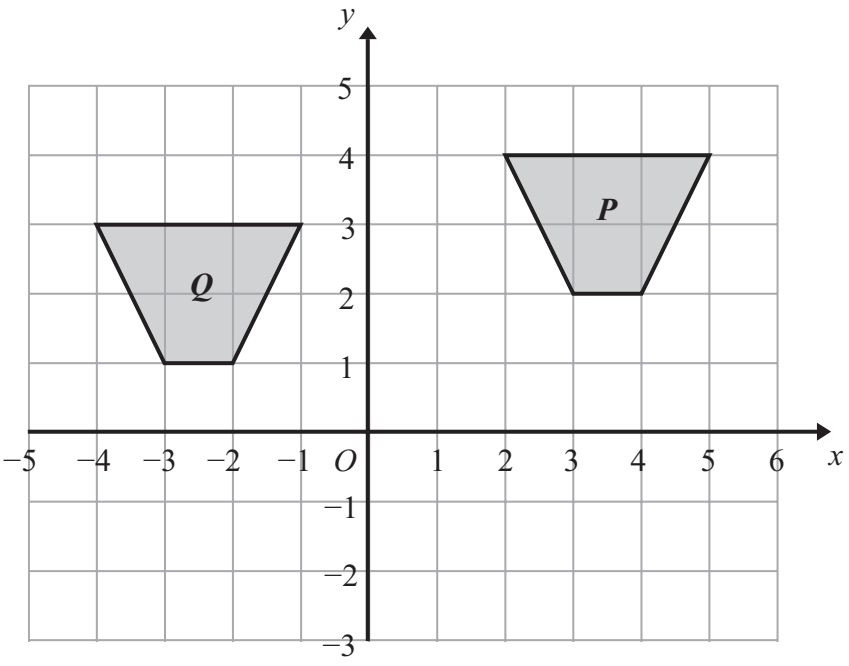
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16.



(a) On the grid above, reflect shape ***A*** in the line $x = -1$

(2)



(b) Describe fully the single transformation that will map shape ***P*** onto shape ***Q***.

.....

.....

Q16

(2)

(Total 4 marks)

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Leave blank

17. Peter, Tarish and Ben share £54

Tarish gets three times as much money as Peter.
Ben gets twice as much money as Tarish.

How much money does Ben get?

£ .....

(Total 3 marks)

Q17

18. Callum says

"4 m² is equivalent to 400 cm²."

Is Callum correct?
Give reasons for your answer.

.....

.....

.....

(Total 2 marks)

Q18

TOTAL FOR PAPER: 60 MARKS

END

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Candidate No.						5	3	8	4	F	/	1	2	F	Signature

Paper Reference(s)

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Edexcel GCSE

Mathematics (Modular) – 2381

Paper 12 (Calculator)

Foundation Tier



Unit 3

Friday 10 June 2011 – Morning

Time: 1 hour

Materials required for examination
Ruler graduated in centimetres and millimetres, protractor, compasses, pen, HB pencil, eraser, calculator.
Tracing paper may be used.

Items included with question papers
Nil

Instructions to Candidates

In the boxes above, write your centre number, candidate number, your surname, initials and signature.
Check that you have the correct question paper.
Answer ALL the questions. Write your answers in the spaces provided in this question paper.
You must NOT write on the formulae page.
Anything you write on the formulae page will gain NO credit.
If you need more space to complete your answer to any question, use additional answer sheets.

Information for Candidates

The marks for individual questions and the parts of questions are shown in round brackets: e.g. **(2)**.
There are 18 questions in this question paper. The total mark for this paper is 60.
There are 16 pages in this question paper. Any blank pages are indicated.
Calculators may be used.
If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.

Advice to Candidates

Show all stages in any calculations.
Work steadily through the paper. Do not spend too long on one question.
If you cannot answer a question, leave it and attempt the next one.
Return at the end to those you have left out.

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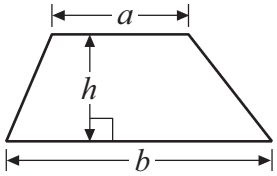
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GCSE Mathematics

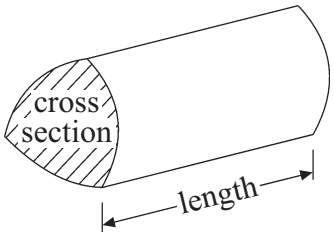
Formulae: Foundation Tier

You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.

Area of trapezium = $\frac{1}{2}(a+b)h$



Volume of prism = area of cross section × length



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Leave blank

Answer ALL EIGHTEEN questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1.

Jessie's Café

Pizza	£2.35	Coffee	80p
Burger	£1.70	Tea	65p
Sandwich	£1.30	Juice	75p

Lisa buys a pizza and a coffee.

(a) Work out the total cost.

£ .....

(1)

Deborah buys 2 burgers and 2 teas.

(b) Work out the total cost.

£ .....

(2)

Michelle has £10
She wants to buy as many sandwiches as possible.

(c) Work out how many sandwiches she can buy.

.....

(2)

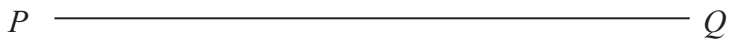
(Total 5 marks)

Q1

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Leave blank

2.



(a) Measure the length of the line PQ.
Give the units with your answer.

.....

(2)

(b) On the diagram, mark with a cross (×) the midpoint of the line PQ.

(1)

Q2

(Total 3 marks)

3. (a) Write 15% as a decimal.

.....

(1)

(b) Write 7% as a fraction.

.....

(1)

(c) Write $\frac{3}{5}$ as a percentage.

.....%

(1)

(d) Work out $\frac{5}{6}$ of 210

.....

(2)

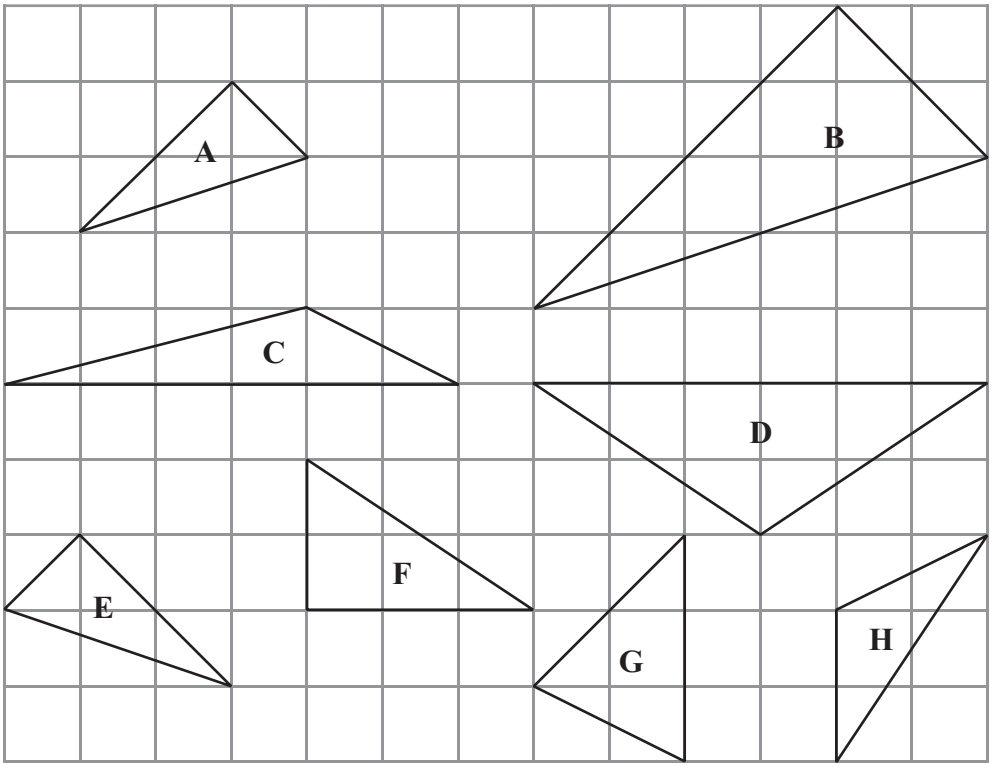
Q3

(Total 5 marks)

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Leave blank

4. Here are some triangles on a grid.



One of these triangles is an isosceles triangle.

(a) Write down the letter of this triangle.

.....
(1)

(b) Write down the special name for triangle **F**.

.....
(1)

Two of the triangles are congruent.

(c) Write down the letters of these two triangles.

..... and .....
(1)

Triangle **B** is an enlargement of triangle **A**.

(d) Write down the scale factor of the enlargement.

.....
(1)

Q4

(Total 4 marks)

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Leave blank

5. A painting had a value of £800
One year later the value increased by 12%.

Work out the new value of the painting.

£ .....

Q5

(Total 3 marks)

6. Mabintou buys 8 CDs.
Each CD costs x pounds.
The total cost is T pounds.

Find a formula for T in terms of x.

.....

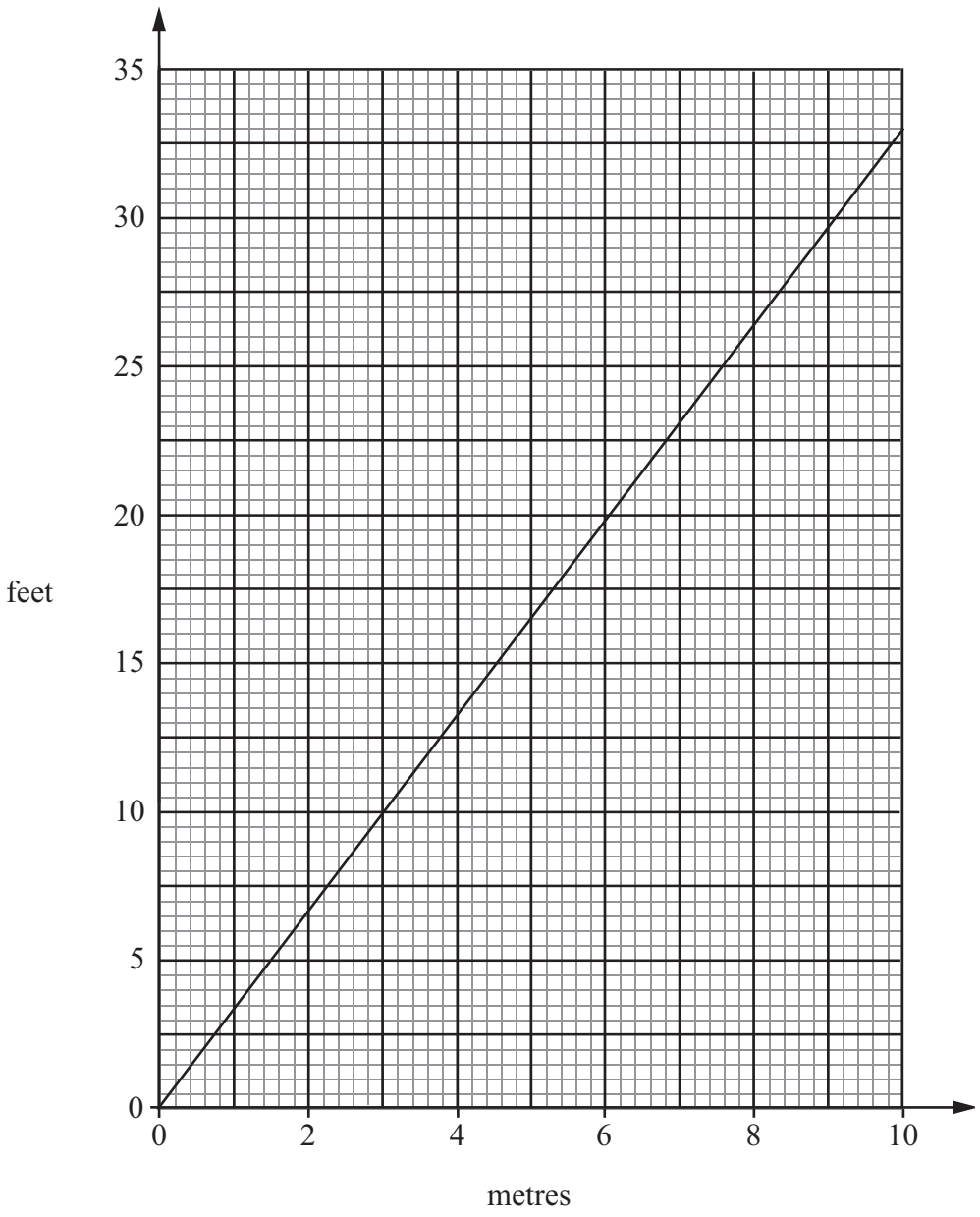
Q6

(Total 2 marks)

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Leave blank

7. This is a graph that can be used to change between metres and feet.



(a) Change 20 feet into metres.

..... m
(1)

Alfie's garden is 15 metres long.

(b) Estimate the length of Alfie's garden in feet.

..... feet
(2)

Q7

(Total 3 marks)

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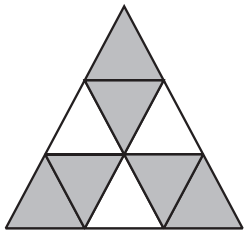
8. (a) How many lines of symmetry does this shape have?



.....

(1)

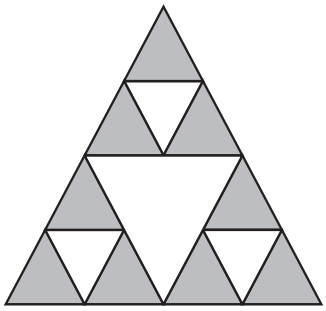
(b) Write down the order of rotational symmetry of this shape.



.....

(1)

This shape is made from equilateral triangles.



(c) What fraction of the above shape is shaded?

.....

(2) **Q8**

(Total 4 marks)

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Leave blank

9. Mel buys 3 kg of carrots and 200 g of mushrooms.
The total cost is £2.95
1 kg of mushrooms costs £3.20

Work out the cost of 1 kg of carrots.

.....

(Total 4 marks)

Q9

10. Kitty says,

"When $x = 4$, the value of $3x^2$ is 144"

Is Kitty correct?

.....

You must give a reason for your answer.

.....

.....

.....

(Total 1 mark)

Q10

11. Write down the ratio 75p to 50p.
Give your answer in its simplest form.

.....

(Total 2 marks)

Q11

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Leave blank

12. (a) Solve $c + 6 = 10$

$c =$ .....

(1)

(b) Solve $\frac{e}{3} = 6$

$e =$ .....

(1)

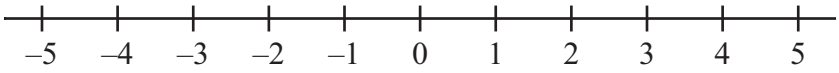
(c) Solve $2x - 3 = 10$

$x =$ .....

(2)

(d) $x > -3$

Show this inequality on the number line.



(2) **Q12**

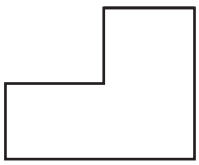
(Total 6 marks)

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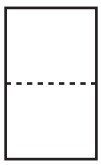
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13. Here are the front elevation, side elevation and plan of a 3-D shape.

Front elevation



Side elevation





Plan

In the space below, draw a sketch of the 3-D shape.

Q13

(Total 2 marks)

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Leave blank

14.

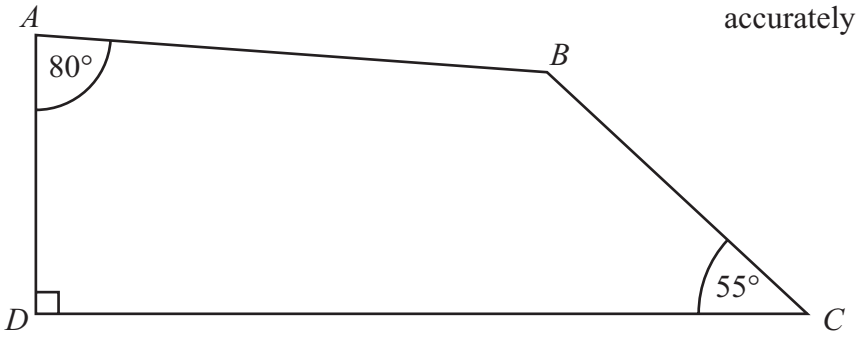


Diagram **NOT** accurately drawn

ABCD is a quadrilateral.

(i) Work out the size of angle *ABC*.

..... °

(ii) Give a reason for your answer.

.....

.....

Q14

(Total 3 marks)

15. Bob has 120 beads.
The beads are either red or green.

Bob gives $\frac{3}{4}$ of the beads to his friend.

$\frac{2}{3}$ of the beads Bob now has are red.

Work out how many green beads Bob now has.

.....

Q15

(Total 3 marks)

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Leave blank

16. The equation

$$x^3 + 5x = 67$$

has a solution between 3 and 4

Use a trial and improvement method to find this solution.
Give your answer correct to one decimal place.
You must show **ALL** your working.

$x =$ .....

Q16

(Total 4 marks)

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Leave blank

17.

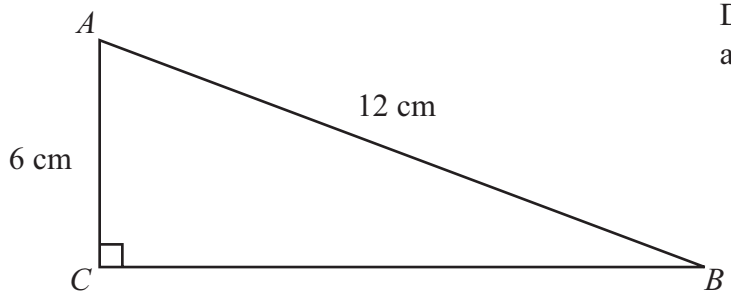


Diagram **NOT** accurately drawn

ABC is a right-angled triangle.

AC = 6 cm.
AB = 12 cm.

Work out the length of *BC*.
Give your answer correct to 1 decimal place.

..... cm

Q17

(Total 3 marks)

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Leave blank

18. The diagram shows a circular pond with a path around it.

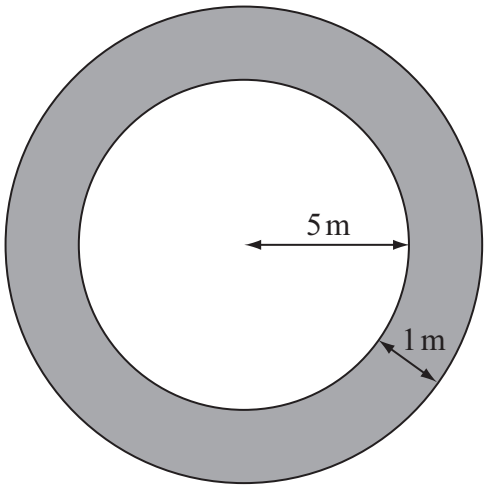


Diagram **NOT** accurately drawn

The pond has a radius of 5 m.
The path has a width of 1 m.

Work out the area of the path.
Give your answer correct to 3 significant figures.

..... m^2 **Q18**

(Total 3 marks)

TOTAL FOR PAPER: 60 MARKS

END

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Mark Scheme (Results)

June 2011

GCSE Mathematics (5384F)
Paper 11F (Non-Calculator)

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June 2011
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NOTES ON MARKING PRINCIPLES

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A marks: accuracy marks
B marks: unconditional accuracy marks (independent of M marks)

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cao – correct answer only
isw – ignore subsequent working
oe – or equivalent (and appropriate)
indep - independent
ft – follow through
SC: special case
dep – dependent

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If no working is shown then correct answers normally score full marks
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Full marks can be gained if the solution alone is given on the answer line, or otherwise unambiguously indicated in working (without contradiction elsewhere). Where the correct solution only is shown substituted, but not identified as the solution, the accuracy mark is lost but any method marks can be awarded.

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Accepted with and without the “p” at the end.

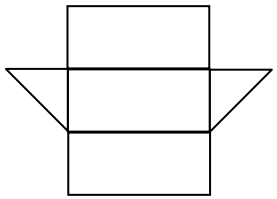
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Unless otherwise stated, when any answer is given as a range (e.g 3.5 – 4.2) then this is inclusive of the end points (e.g 3.5, 4.2) and includes all numbers within the range (e.g 4, 4.1).

5384F_11F					
Question		**Working**	**Answer**	**Mark**	**Notes**
1	(a)		2.4	1	B1 cao
	(b)		25.8	1	B1 cao
	(c)		0.7	1	B1 cao
	(d)		0.38	1	B1 cao
2	(a)		3	1	B1 cao
	(b)		2 lines of symmetry	2	B2 for 2 correct lines of symmetry and no extra lines (B1 for 2 correct lines of symmetry and 1 incorrect **or** 1 correct line of symmetry and 0 or 1 incorrect) SC: B1 if the 2 cross diagonals drawn in addition to the 2 correct lines of symmetry
3	(a)	4 × 6.20	24.80	2	M1 for 4 × 6.2 or 6.2 + 6.2 + 6.2 + 6.2 oe A1 for 24.8(0) (accept 24.80p)
	(b)	15.50 ÷ 6.20	2.5	2	M1 for 15.5 ÷ 6.2 or 15.5 – 6. 2 – 6. 2 or 6.2 + 6.2 + '3.1' A1 for 2.5 or $2\frac{1}{2}$ or 2 h 30 (m) (condone 2:30 but do not accept 2.30)

5384F_11F					
Question		**Working**	**Answer**	**Mark**	**Notes**
4	(a)	1485 – 737 748	748	2	M1 for decomposition or adding on or sight of 8 as units digit after subtraction. A1 cao
	(b)	53 × 5 = 265 246 + 13 = 259 265 – 259 = OR 246 + 13 = 259 53×4 = 212 259 – 212 = 47 53 – 47 =	6	3	M1 for 53 × 5 or 265 seen M1 for "265" − (246 + 13) A1 cao OR M1 for (246 + 13) – 53 × 4 or 47 seen M1 for 53 – "47" A1 cao SC: B2 for answer of 19
5	(a)		48	1	B1 for 48 (± 2)
	(b)		Angle drawn	1	B1 for 150º angle drawn within guidelines (see overlay)
	(c)		60	1	B1 cao
6	(a)		6 am	1	B1 cao
	(b)	7 − (−3)	10	1	B1 for 10 (accept – 10) or ft from (a)
	(c)		2 pm and 6 pm	1	B1 cao

5384F_11F					
Question		**Working**	**Answer**	**Mark**	**Notes**
7		12642 − 12478 164 × 40	65.60	4	M1 for 12642 – 12478 oe or sight of 164 M1 for × 40 or × 0.4(0) M1 for conversion to £ (e.g. use of 0.4(0)) or conversion of "6560" to "65.6(0)" A1 for £65.6(0) SC: B2 for sight of digits 6560
8			Square based pyramid	1	B1 for (square based) pyramid
9			Triangle drawn	2	B2 for correct triangle (see overlay) (B1 for angle of 40° drawn (±2°) or side of length 5.3 cm drawn (±0.2 cm))
10			Output = 20 Input = 15	2	B1 for 20 B1 for 15
11	(a)		4 : 11	1	B1 cao
	(b)	8 × 10000 ÷ 100	800	2	M1 for 8.0 (±0.2) × 10000 or 78 000 – 82 000 seen or 8.0 (±0.2) ÷ 100 or 0.078 – 0.082 seen A1 for 780 – 820

5384F_11F					
Question		**Working**	**Answer**	**Mark**	**Notes**
12		$1-\left(\frac{30}{80}+\frac{40}{100}\right)$ $=1-\left(\frac{300}{800}+\frac{320}{800}\right)$ $=1-\frac{620}{800}$ $=\frac{180}{800}$ OR e.g. N = 80 $\frac{3}{8}\times 80 = 30$; $\frac{40}{100}\times 80 = 32$ 80 – 30 – 32 = 18 ans = $\frac{18}{80}$	$\frac{9}{40}$	3	M1 for 3 ÷ 8 or 0.375 or 37.5(%) or $\frac{40}{100}$ oe or 0.4 seen M1(dep) for $1-\frac{3}{8}$ – "$\frac{40}{100}$" or 1 – "0.375" – "0.4" or 100(%) – 40(%) – "37.5"(%) A1 for $\frac{9}{40}$ oe or 22.5% or 0.225 OR M1 for $\frac{3}{8}\times N$ and $\frac{40}{100}\times N$ where N = their total M1(dep) for $N-\frac{3}{8}\times N-\frac{40}{100}\times N$ A1 for $\frac{9}{40}$ oe or 22.5% or 0.225
13	(a)		Net drawn	2	B2 for fully complete and correct sketch (B1 for sketch of net with 3 or 4 correct faces).
	(b)		Perpendicular bisector drawn	2	B2 for correct line with 2 valid pairs of intersecting arcs (B1 for line within guidelines or 2 valid pairs of intersecting arcs shown)

5384F_11F					
Question		**Working**	**Answer**	**Mark**	**Notes**
14	(a)	$2 \times 5 + 3 \times -1$	7	2	M1 for 2×5 and 3×-1 **or** 10 and -3 seen A1 cao
	(b)	$3 \times -4 \times -4$	48	2	M1 for $3 \times (-4)^2$ or $3 \times -4 \times -4$ or 3×16 or 3×-16 or -12×-4 or -48 A1 cao
	(c)	$3y = x + 2$	$x = 3y - 2$	2	M1 for attempting to multiply both sides by 3 or for a correct step which may follow an incorrect first step A1 cao
15	(a)	$2 \times 2 \times 2 \times 2$	16	1	B1 cao
	(b)		t^3	1	B1 cao
	(c)	$\frac{n^9}{n^5}$	n^4	2	B2 cao (B1 for $n^3 \times n^2 = n^5$ or $\frac{n^9}{n^5}$ or $n^9 \div n^3 = n^6$ or $\frac{n^6}{n^2}$ or $n^9 \div n^2 = n^7$ or $\frac{n^7}{n^3}$ or for a correct second step following an incorrect first step e.g. $\frac{n^9}{n^6} = n^3$)

5384F_11F					
Question		**Working**	**Answer**	**Mark**	**Notes**
16	(a)		Reflection	2	B2 for shape with vertices at (−3, 2), (−3, 3), (−5, 3), (−6, 2.5), (−5, 2) (B1 for a reflection in any vertical or horizontal line)
	(b)		Translation $\begin{pmatrix} -6 \\ -1 \end{pmatrix}$	2	B1 for translation B1 for $\begin{pmatrix} -6 \\ -1 \end{pmatrix}$ or 6 left and 1 down Note: B0 if more than one transformation given

5384F_11F					
Question		**Working**	**Answer**	**Mark**	**Notes**
17		P : T : B = 1 : 3 : 6 $\frac{54}{10}\times 6$ OR e.g. T = 3P B = 2T So, B = 2(3P) = 6P P + T + B = P + 3P + 6P = 10P $P = \frac{54}{10}$ = £5.40 B = 6 × £5.40	32.40	3	M1 for 1 : 3 : 6 or any 3 numbers, in any order, in the ratio 1 : 3 : 6 M1 for 54 ÷ (1 + 3 + 6) × 6 A1 for 32.4(0) OR M1 for 1 : 3 : 6 oe or P + 3P + 6P (= 10P) oe e.g. $\frac{T}{3} + T + 2T(= \frac{10T}{3})$ e.g. $\frac{B}{6} + \frac{B}{2} + B (= \frac{10B}{6})$ or 5.4(0) or 16.2(0) seen M1 for $\frac{54}{10} \times 6$ or $54 \div$ "$\frac{10}{3}$" × 2 or $54 \div$ "$\frac{10}{6}$"oe A1 for 32.4(0) OR M1 for a partial decomposition of £54 in ratio 1 : 3 : 6, e.g. (£)5 + (£)15 + (£)30 (=£50) M1 for a decomposition of the remaining amount, e.g. 40(p) + 120(p) + 240(p) (=400p) A1 for 32.4(0)
18		1 m² = 100 × 100 cm² 4 m² = 40 000 cm²	Decision and explanation	2	B2 for stating Callum is not correct with full correct explanation (B1 for 100 × 100 or 10 000 seen or 200 × 200 or 40 000 seen or 0.01 × 0.01 or 0.0001 seen or 0.04 seen)

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Mark Scheme (Results)

June 2011

GCSE Mathematics (5384F)
Paper 12F

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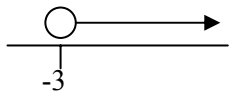
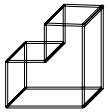
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1	(a)	2.35 + 0.80	3.15	1	B1 cao
	(b)	1.70 + 1.70 + 0.65 + 0.65	4.70	2	M1 for 2×1.70 + 2×0.65 oe (units may not be consistent) **or** 470 seen A1 allow 4.7
	(c)		7	2	M1 for 10 ÷ 1.30 **or** answer between 7.6 to **and** 7.7 inclusive **or** 7×1.30(=9.10) **or** successive addition/subtraction where at least 5 are shown oe A1 for 7
2	(a)		8.4 cm or 84 mm	2	B2 for 8.4 cm ± 0.2 cm **or** 84 mm ± 2 mm **or** 3.3 inches ± 0.1 inches (o.e.) (B1 for 8.4 ± 0.2 or 84 ± 2 or 3.3 ± 0.1 o.e. or x cm where $6 < x < 11$ or x mm where $60 < x < 110$ or x inches where $2 < x < 5$)
	(b)		midpoint drawn	1	B1 for midpoint marked at 4.2 cm ± 0.2 cm
3	(a)		0.15	1	B1 cao
	(b)		$\frac{7}{100}$	1	B1 cao
	(c)		60%	1	B1 cao
	(d)	210 ÷ 6 × 5 = 35 × 5	175	2	M1 for 210 ÷ 6 × 5 oe **or** 210 ÷ 6 (=35) oe **or** 210 × 5 (=1050) oe **or** 175 seen A1 cao

5384F/12F				
Question	**Working**	**Answer**	**Mark**	**Notes**
4 (a)		D	1	B1 cao
(b)		right angled	1	B1 cao
(c)		A and E	1	B1 cao
(d)		2	1	B1 cao
5	$\frac{12}{100} \times 800 = 96$ OR 10% = 800 ÷ 10 = 80 2% = 80 ÷ 5 = 16 80 + 16 = 96 800 + 96	896	3	M1 for $\frac{12}{100} \times 800$ oe **or** 96 **or** 80 + 16 M1 (dep) for "96" + 800 A1 cao OR M2 for 800 × 1.12 A1 cao SC : If no marks scored, award B1 for an answer of £704
6		$T = 8x$	2	B2 for $T = 8x$ (B1 for $T = x$ **or** $8x$ oe **or** any correct formula where T is not the subject, eg. $x = \frac{T}{8}$ **or** $x = T \div 8$)
7 (a)		6 to 6.2	1	B1 for answer in the range 6 to 6.2 metres
(b)	5m + 10m ≈ 16.5 + 33	48 to 51	2	M1 for correct full method to convert 15m (eg. conversion of 5m + 10m or 5m × 3 or equivalent) A1 for answer in the range 48 to 51 **or** M1 for follow through from (a) ie 15÷ "6" × 20 A1 for answer in the range 48 to 51

5384F/12F				
Question	**Working**	**Answer**	**Mark**	**Notes**
8 (a)		2	1	B1 cao
(b)		3	1	B1 cao
(c)		$\frac{9}{16}$	2	B2 for $\frac{9}{16}$ or 0.5625 (B1 for $\frac{x}{16}$ with $x < 16$, or $\frac{9}{x}$ with $x > 9$)
9	320 ÷ 5 = 64 (295 – 64) ÷ 3 = 231 ÷ 3	77p or £0.77	4	M1 for 320 ÷ 5 or 3.20 ÷ 5 or 64 or 0.64 M1 for 295 – '64' **or** 231 **or** 2.95 – '0.64' **or** 2.31 M1 for (295 – '64') ÷ 3 oe **or** (2.95 – '0.64') ÷ 3 oe A1 for 77p or £0.77 cao SC: B3 for 0.77(p) or (£)77 or £0.77p
10	$3 \times 4^2 = 3 \times 16 = 48$	No, with reason	1	B1 for 'No, because squaring must be carried out before mulitplying by 3' or equivalent, **or** No, because the correct answer is 48
11	75:50	3 :2	2	M1 for 75:50 or any correct ratio not simplified A1 for 3 : 2 [SC: B1 for 2 : 3]

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5384F/12F				
Question	**Working**	**Answer**	**Mark**	**Notes**
12 (a)		4	1	B1 cao
(b)		18	1	B1 cao
(c)	$2x = 10 + 3$	6.5	2	M1 for $2x = 10 + 3$ **or** $x - \frac{3}{2} = \frac{10}{2}$ oe **or** as a first step a clear intention to add 3 to both sides **or** clear intention to divide all 3 terms by 2 A1 for 6.5 oe
(d)			2	B2 for an open circle at -3 with either an arrow to the right or a line segment from -3 to at least 5, ±2 mm (B1 for an open circle at -3 with either an arrow to the left or an incorrect line segment **OR** a closed circle or no circle at -3 with either an arrow to the right or a line segment from -3 to at least 5, ±2 mm)
13			2	B2 for a clear sketch of a prism with an 'L' shaped cross-section [B1 for a sketch of a cuboid or a sketch of a 2D 'L' with an attempt to make it 3D with additional lines]
14	$360 - (90 + 80 + 55)$	135	3	M1 for $360 - (90 + 80 + 55)$ oe **or** $B = 135$ or 135 on diagram for angle B A1 cao B1 for the sum of the **angles** of a **quadrilateral** is **360°**

<table>
<tr><th colspan="5">5384F/12F</th></tr>
<tr><th>Question</th><th>Working</th><th>Answer</th><th>Mark</th><th>Notes</th></tr>
<tr><td>15</td><td>$\frac{3}{4} \times 120 = 90$
120 – 90 = 30 left
30 ÷ 3</td><td>10</td><td>3</td><td>M1 for $\frac{3}{4} \times 120$ oe or 90 or $\frac{1}{4} \times 120$ oe or 30
M1 (dep) for ‘30’ – (2 × ‘30’ ÷ 3) oe or $\frac{1}{3} \times$ ‘30’ oe
A1 cao</td></tr>
<tr><td>16</td><td><table><tr><td>x</td><td>$x^3 + 5x$</td></tr><tr><td>3</td><td>42</td></tr><tr><td>3.4</td><td>56.(304)</td></tr><tr><td>3.5</td><td>60.(375)</td></tr><tr><td>3.6</td><td>64.(656)</td></tr><tr><td>3.7</td><td>69.(153)</td></tr><tr><td>3.8</td><td>73.(872)</td></tr><tr><td>3.9</td><td>78.(819)</td></tr><tr><td>4</td><td>84</td></tr><tr><td>3.65</td><td>66.8(77)</td></tr><tr><td>3.66</td><td>67.3(27)</td></tr><tr><td>3.67</td><td>67.7(80)</td></tr><tr><td>3.68</td><td>68.2(36)</td></tr><tr><td>3.69</td><td>68.6(93)</td></tr></table></td><td>3.7</td><td>4</td><td>B2 for a trial between 3 and 4 exclusive
(B1 for a trial between 3 and 4 inclusive)
B1 for a different trial of $3.65 \leq x < 3.7$
B1 (dep on at least one previous B1) for 3.7

NB For values of x to 1 dp trials should be evaluated to at least 2 significant figures and for values of x to 2dp trials should be evaluated to at least 1 dp
Truncated or rounded.

NB No working score 0 marks</td></tr>
<tr><td>17</td><td>$BC^2 + 6^2 = 12^2$
$BC = \sqrt{144 - 36}$</td><td>10.4</td><td>3</td><td>M1 for $BC^2 + 6^2 = 12^2$ oe or (BC^2=) $12^2 – 6^2$ (=108)
M1 for $BC = \sqrt{144 - 36}$ or $\sqrt{108}$
A1 for 10.39 – 10.4</td></tr>
<tr><td>18</td><td>$\pi(6)^2 \quad - \quad \pi(5)^2$
= 113(.0973…) – 78.5(398…)
= 34.55751919…</td><td>34.6</td><td>3</td><td>M1 for $\pi(6)^2$ oe or $\pi(5)^2$ oe or 113… or 78.5…
M1 for $\pi(6)^2 - \pi(5)^2$ oe
A1 for 34.5 - 34.6</td></tr>
</table>

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Centre No.						Paper Reference								Surname	Initial(s)
Candidate No.						5	3	8	4	F	/	1	1	F	Signature

Paper Reference(s)

5384F/11F

Examiner's use only

Team Leader's use only

Edexcel GCSE

Mathematics (Modular) – 2381

Paper 11 (Non-Calculator)

Foundation Tier



Unit 3

Tuesday 9 November 2010 – Morning

Time: 1 hour

Materials required for examination
Ruler graduated in centimetres and millimetres, protractor, compasses, pen, HB pencil, eraser.
Tracing paper may be used.

Items included with question papers
Nil

Instructions to Candidates

In the boxes above, write your centre number, candidate number, your surname, initials and signature.
Check that you have the correct question paper.
Answer ALL the questions. Write your answers in the spaces provided in this question paper.
You must NOT write on the formulae page.
Anything you write on the formulae page will gain NO credit.
If you need more space to complete your answer to any question, use additional answer sheets.

Information for Candidates

The marks for individual questions and the parts of questions are shown in round brackets: e.g. **(2)**.
There are 21 questions in this question paper. The total mark for this paper is 60.
There are 16 pages in this question paper. Any blank pages are indicated.
Calculators must not be used.

Advice to Candidates

Show all stages in any calculations.
Work steadily through the paper. Do not spend too long on one question.
If you cannot answer a question, leave it and attempt the next one.
Return at the end to those you have left out.

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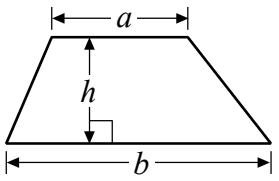
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GCSE Mathematics 2381

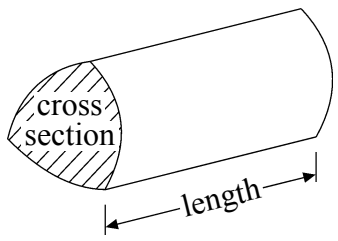
Formulae: Foundation Tier

You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.

Area of trapezium = $\frac{1}{2}(a+b)h$



Volume of prism = area of cross section × length



N 3 7 7 3 1 A 0 2 1 6

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Answer ALL TWENTY ONE questions.

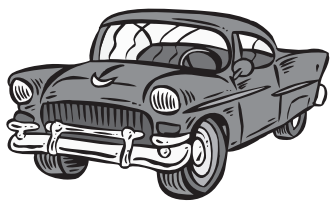
Write your answers in the spaces provided.

You must write down all stages in your working.

You must NOT use a calculator.

1. Complete this bill.

Joe's Car Shop



Item	Number of items	Costs of one item	Total
Spanner	2	£3.99	£7.98
De-icer	4	£1.50	£.....
Wiper blade	2	£.....	£9.00
		Total cost	£.....

Q1

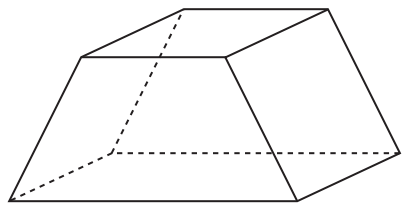
(Total 3 marks)

N 3 7 7 3 1 A 0 3 1 6

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Leave blank

2. Here is a diagram of a prism.



Write down the number of

(i) faces

.....

(ii) edges

.....

(iii) vertices

.....

(Total 3 marks)

Q2

3. $d = 6$

(a) (i) Work out the value of $3 + d$

.....

(ii) Work out the value of $2d$

.....

(2)

$h = 3f + 4g$

$f = 2$
$g = -1$

(b) Work out the value of h

$h =$.....

(2)

Q3

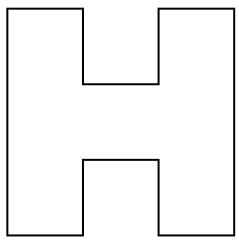
(Total 4 marks)

N 3 7 7 3 1 A 0 4 1 6

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Leave blank

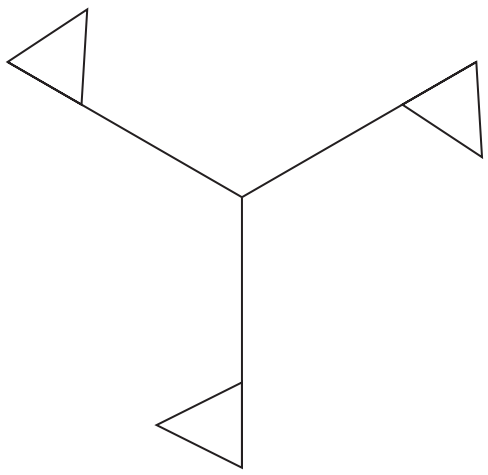
4. (a) On the shape, draw all the lines of symmetry.



(2)

The shape below has rotational symmetry.

(b) Write down the order of rotational symmetry.



.....

(1)

Q4

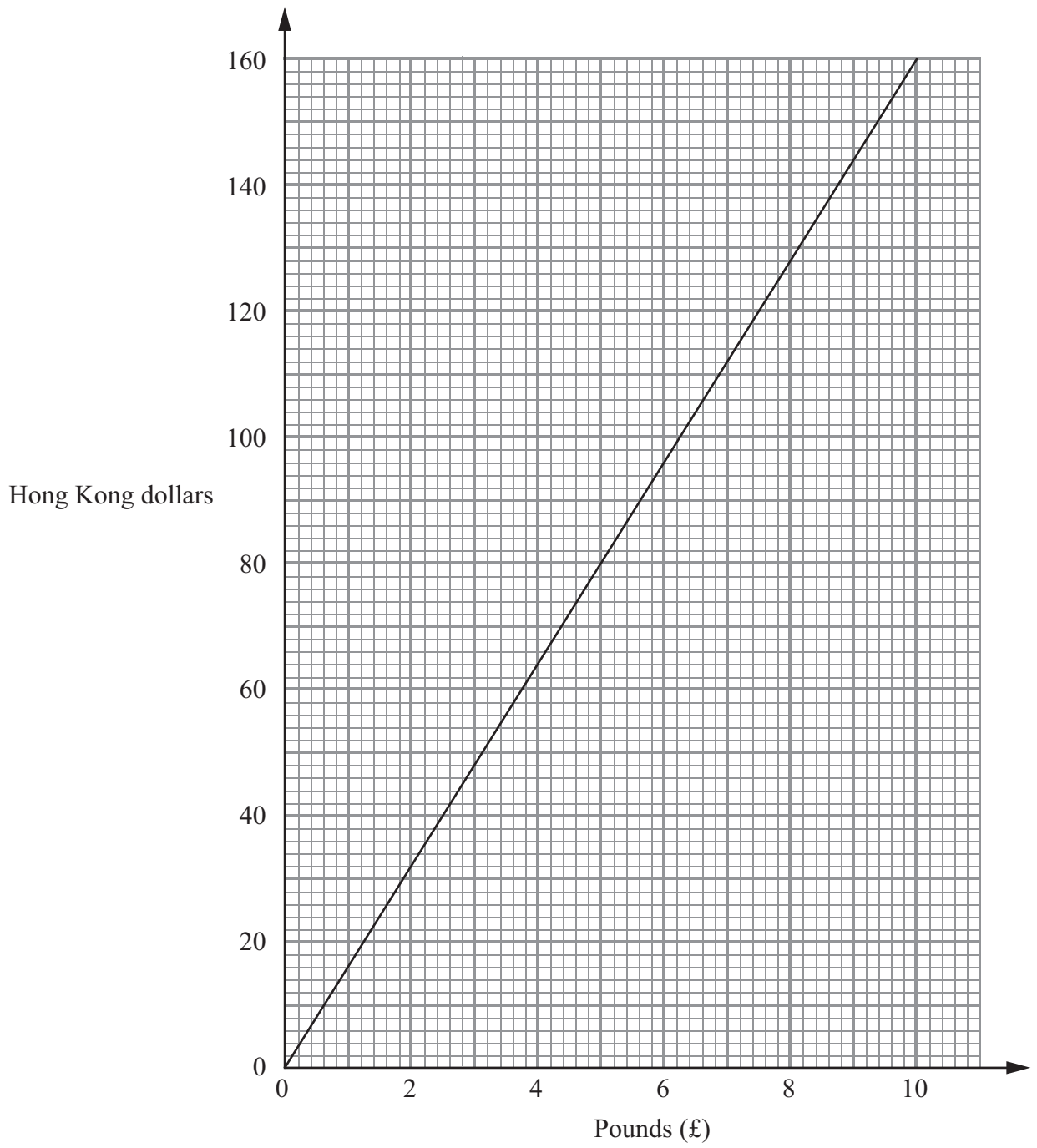
(Total 3 marks)

N 3 7 7 3 1 A 0 5 1 6

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Leave blank

5. This graph can be used to change between pounds (£) and Hong Kong dollars.



(a) Use the graph to change £5 to Hong Kong dollars.

.....Hong Kong dollars
(1)

(b) Use the graph to change 120 Hong Kong dollars to pounds.

£.....
(1)

Q5

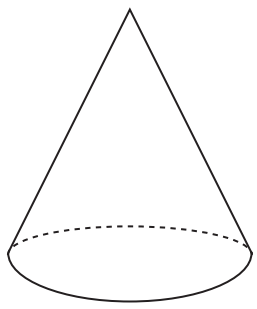
(Total 2 marks)

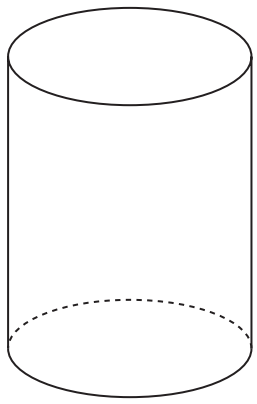
N 3 7 7 3 1 A 0 6 1 6

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Leave blank

6. Write down the mathematical name of each of these solid shapes.





(i) ..... (ii) .....

(Total 2 marks)

Q6

7. Change $\frac{3}{5}$ into a decimal.

.....

(Total 2 marks)

Q7

8. (a) Work out the value of

(i) $-3 + 7$

.....

(ii) $4 - 6$

.....

(2)

(b) Work out the value of

(i) $-10 \div 5$

.....

(ii) -3×-4

.....

(2)

Q8

(Total 4 marks)

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Leave blank

9.

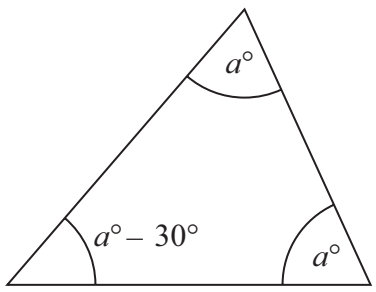


Diagram **NOT** accurately drawn

The diagram shows a triangle.

The size of the angles, in degrees, are a
a
$a - 30$

Work out the value of a.

$a =$ .....

(Total 3 marks)

Q9

10. (a) Solve $p + p + p = 15$

$p =$ .....

(1)

(b) Solve $f + 5 = 8$

$f =$ .....

(1)

Q10

(Total 2 marks)

N 3 7 7 3 1 A 0 8 1 6

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Leave blank

11. (a) Mark the midpoint of the line AB with a cross (×).
Label the midpoint with the letter P.

(1)

A ——————————————— B

(b) Use the point P to draw a circle with a radius of 5 cm.

(2) **Q11**

(Total 3 marks)

12. There are 150 tissues in a box.



Susie uses $\frac{2}{5}$ of these tissues.

How many tissues are there now in the box?

..... tissues **Q12**

(Total 3 marks)

N 3 7 7 3 1 A 0 9 1 6

Turn over

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13. Jonty invests £500 for 2 years at 4% **simple interest** each year.

Work out the total amount of interest Jonty gets.

£ .....

(Total 2 marks)

Q13

14. Work out 451 × 23

.....

(Total 3 marks)

Q14

N 3 7 7 3 1 A 0 1 0 1 6

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Leave blank

15. There are 540 workers in a factory.

240 of the workers are female.

15% of **male** workers are more than 50 years of age.

Work out the number of male workers that are more than 50 years of age.

.....

(Total 3 marks)

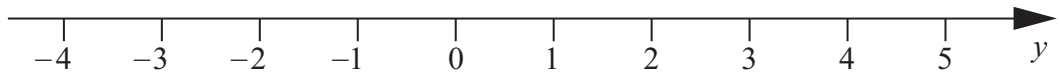
Q15

N 3 7 7 3 1 A 0 1 1 1 6

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Leave blank

16. (a) On the number line below mark the inequality $-1 < y < 4$



(1)

(b) Here is an inequality, in x, shown on a number line.



Write down the inequality.

.....

(2)

(c) Solve the inequality $3t + 5 > 17$

.....

(2)

Q16

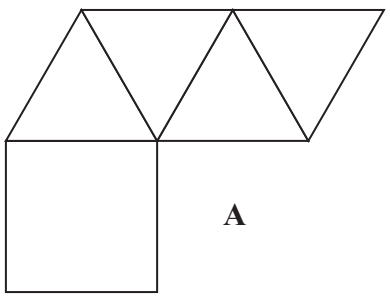
(Total 5 marks)

N 3 7 7 3 1 A 0 1 2 1 6

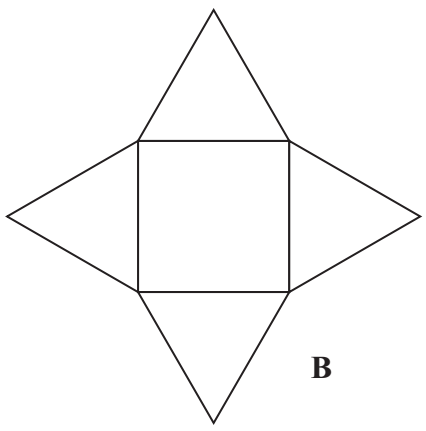
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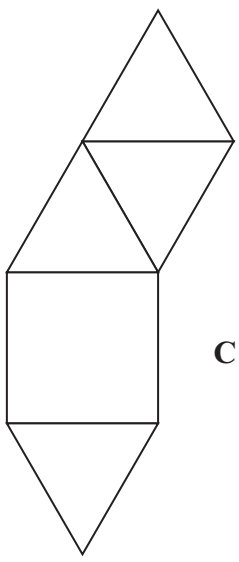
17. Here are 5 diagrams.



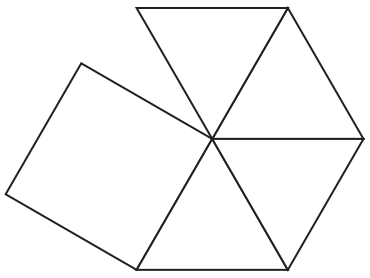
A



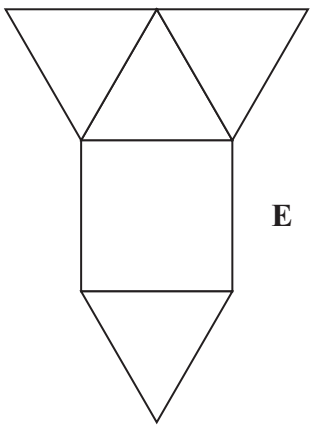
B



C



D



E

Two of these diagrams show a net for a square-based pyramid.

Write down the letter of each of these two diagrams.

..... and .....

(Total 2 marks)

Q17

18. There are 24 students in a dance class.
6 of the students are boys.
18 of the students are girls.

Write, as a ratio, the number of boys to the number of girls in the dance class.
Give your answer in its simplest form.

.....

(Total 2 marks)

Q18

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Leave blank

19. Work out $3\frac{4}{5} - 1\frac{1}{4}$

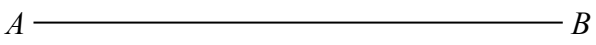
.....

(Total 3 marks)

Q19

20. Use ruler and compasses to **construct** the perpendicular bisector of the line *AB*.

You must show all your construction lines.



Q20

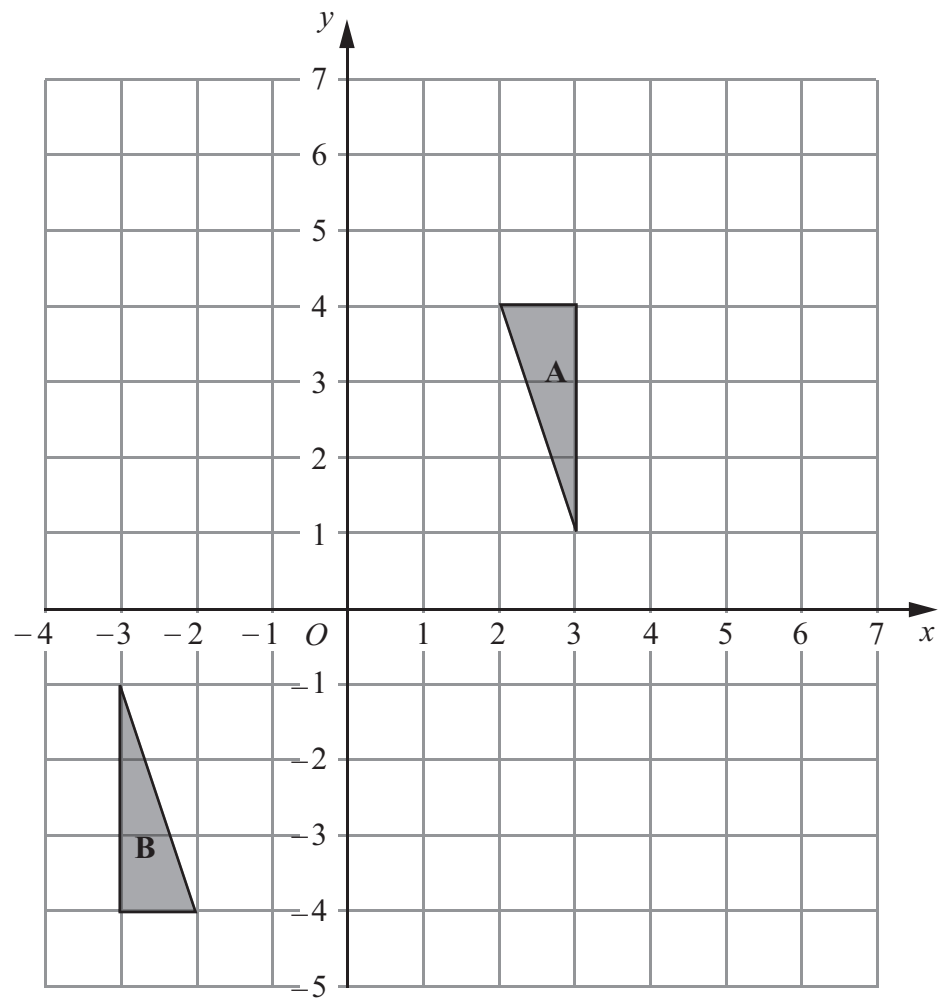
(Total 2 marks)

N 3 7 7 3 1 A 0 1 4 1 6

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Leave blank

21.



Triangle **A** and triangle **B** are drawn on the grid.

(a) Describe fully the single transformation which maps triangle **A** onto triangle **B**.

.....

.....

(3)

(b) Translate triangle **A** by the vector $\begin{pmatrix} 3 \\ 0 \end{pmatrix}$.

Label the new triangle **C**.

(1) **Q21**

(Total 4 marks)

TOTAL FOR PAPER: 60 MARKS

END

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N 3 7 7 3 1 A 0 1 6 1 6

Centre No.						Paper Reference								Surname	Initial(s)
Candidate No.						5	3	8	4	F	/	1	2	F	Signature

Paper Reference(s)

5384F/12F

Examiner's use only

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Edexcel GCSE

Mathematics (Modular) – 2381

Paper 12 (Calculator)

Foundation Tier



Unit 3

Friday 12 November 2010 – Morning

Time: 1 hour

Materials required for examination
Ruler graduated in centimetres and millimetres, protractor, compasses, pen, HB pencil, eraser, calculator.
Tracing paper may be used.

Items included with question papers
Nil

Instructions to Candidates

In the boxes above, write your centre number, candidate number, your surname, initials and signature.
Check that you have the correct question paper.
Answer ALL the questions. Write your answers in the spaces provided in this question paper.
You must NOT write on the formulae page.
Anything you write on the formulae page will gain NO credit.
If you need more space to complete your answer to any question, use additional answer sheets.

Information for Candidates

The marks for individual questions and the parts of questions are shown in round brackets: e.g. **(2)**.
There are 22 questions in this question paper. The total mark for this paper is 60.
There are 20 pages in this question paper. Any blank pages are indicated.
Calculators may be used.
If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.

Advice to Candidates

Show all stages in any calculations.
Work steadily through the paper. Do not spend too long on one question.
If you cannot answer a question, leave it and attempt the next one.
Return at the end to those you have left out.

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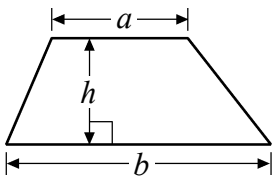
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GCSE Mathematics 2381

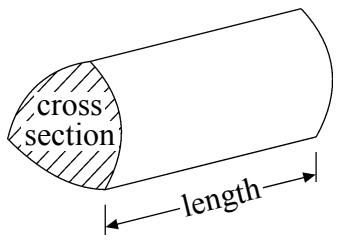
Formulae: Foundation Tier

You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.

Area of trapezium = $\frac{1}{2}(a + b)h$



Volume of prism = area of cross section × length



N 3 7 7 3 2 A 0 2 2 0

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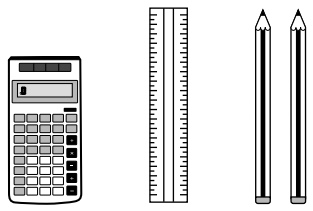
Answer ALL TWENTY TWO questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

1. Melissa buys

1 calculator at £4.38
1 ruler at 45p
2 pencils at 29p each



She pays with a £10 note.

Work out how much change Melissa should get.

£ .....

Q1

(Total 3 marks)

2. In the space below, sketch a cuboid.

Q2

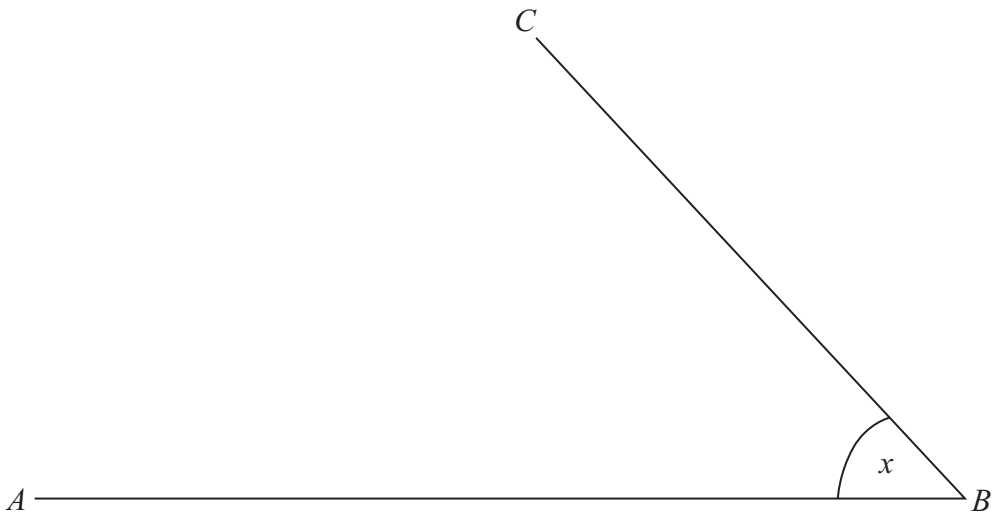
(Total 1 mark)

N 3 7 7 3 2 A 0 3 2 0

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3.



(a) Measure the length of the line AB.
Give the units with your answer.

.....

(2)

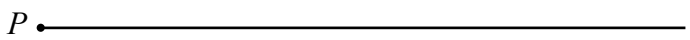
(b) Measure the size of the angle marked x.

°

.....

(1)

(c) On the line, draw an angle of 75° at the point P.



(1) **Q3**

(Total 4 marks)

N 3 7 7 3 2 A 0 4 2 0

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Leave blank

4. 32 litres of fuel cost £29.76

Work out the cost of 1 litre of fuel.
Give your answer in pence.

..... pence

Q4

(Total 3 marks)

5. Fiona uses this rule to work out her pay.

Pay = £5.85 × number of hours worked

In one week Fiona worked 15 hours.

(a) Use the rule to work out Fiona's pay.

£ .....

(2)

In another week Fiona's pay was £134.55

(b) Work out the number of hours she worked.

..... hours

(2)

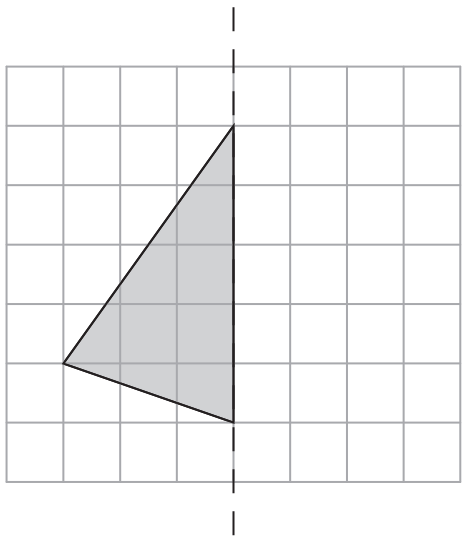
Q5

(Total 4 marks)

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Leave blank

6. On the grid, reflect the shaded shape in the mirror line.



Q6

(Total 1 mark)

7. There are 11 children in a room.

6 of the children are girls.

(a) What fraction of the children are girls?

.....

(1)

2 of the boys are sitting down.

(b) What fraction of the boys are sitting down?

.....

(1) **Q7**

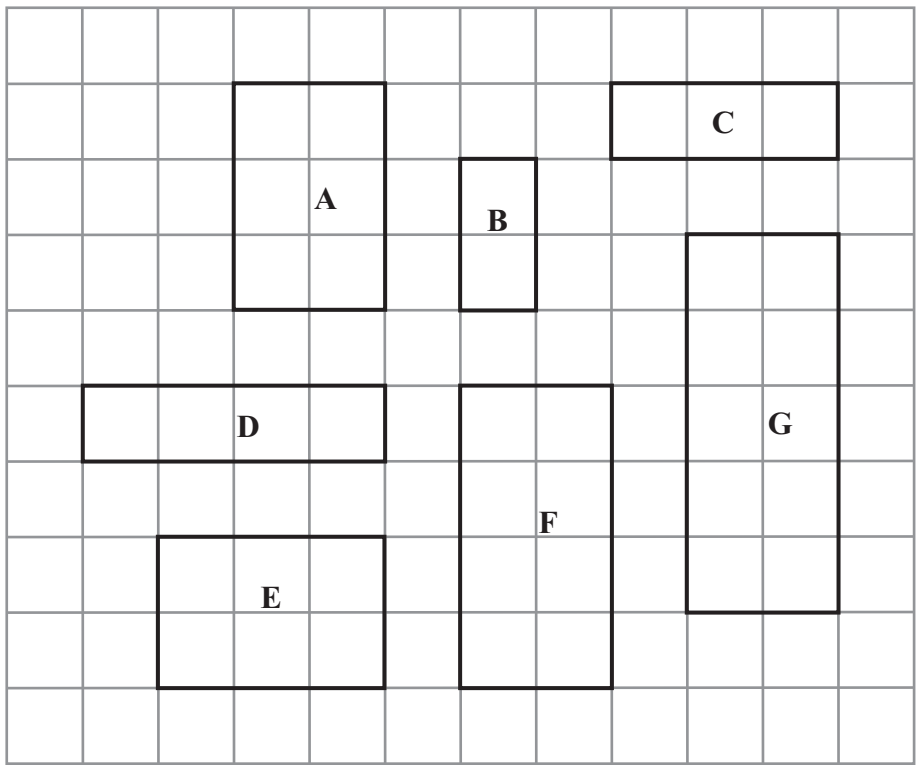
(Total 2 marks)

N 3 7 7 3 2 A 0 6 2 0

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Leave blank

8. Here are some rectangles on a grid of centimetre squares.



Two of the rectangles are congruent.

(a) Write down the letters of these two rectangles.

..... and .....

(1)

Rectangle **F** is an enlargement of rectangle **B**.

(b) Write down the scale factor of the enlargement.

.....

(1)

Q8

(Total 2 marks)

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Leave blank

9. (a) Write the fraction $\frac{1}{2}$ as a percentage.

..... %
(1)

(b) Write 20% as a fraction.
Give your fraction in its simplest form.

.....
(2)

(c) Work out $\frac{1}{3}$ of £21.96

£ .....
(1)

(Total 4 marks)

Q9

10. (a) Solve $6x = 30$

$x =$ .....
(1)

(b) Solve $17 - y = 14$

$y =$ .....
(1)

(Total 2 marks)

Q10

N 3 7 7 3 2 A 0 8 2 0

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Leave blank

11. Here is a sketch of a rectangle.

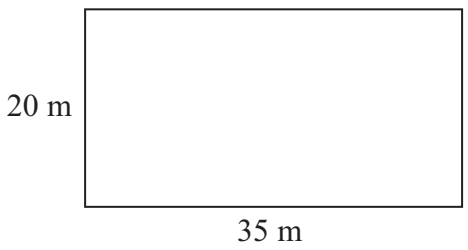


Diagram **NOT** accurately drawn

The lengths of the sides of the rectangle are given in metres.

Make an accurate scale drawing of the rectangle.
Use a scale of 1 cm to 5m.

Q11

(Total 2 marks)

N 3 7 7 3 2 A 0 9 2 0

Turn over

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Leave blank

12. Kumal wrote down the reading on his electricity meter at the beginning of January and at the end of January.
The table gives information about these readings.

	Meter reading (units)
End of January	5986
Beginning of January	4176

Kumal pays 13.9p for each unit of electricity he uses.

Work out how much Kumal pays for the electricity he used in January.

.....

Q12

(Total 4 marks)

N 3 7 7 3 2 A 0 1 0 2 0

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Leave blank

13. The table gives information about the temperatures in 5 cities at 6 am one day in December.

City	Temperature (°C)
Southampton	3
Glasgow	–8
London	0
Cardiff	–5
Manchester	–2

(a) Write down the city with the lowest temperature.

.....

(1)

(b) Work out the difference in temperature between Southampton and Manchester.

..... °C

(1)

By noon the temperature in Cardiff had increased by 7°C.

(c) Work out the temperature in Cardiff at noon.

..... °C

(1)

Q13

(Total 3 marks)

N 3 7 7 3 2 A 0 1 1 2 0

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Leave blank

14. The diagram shows a quadrilateral.

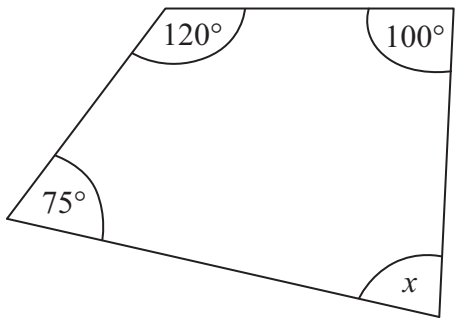


Diagram **NOT** accurately drawn

(i) Work out the size of the angle marked x.

.....°

(ii) Give a reason for your answer.

.....

.....

Q14

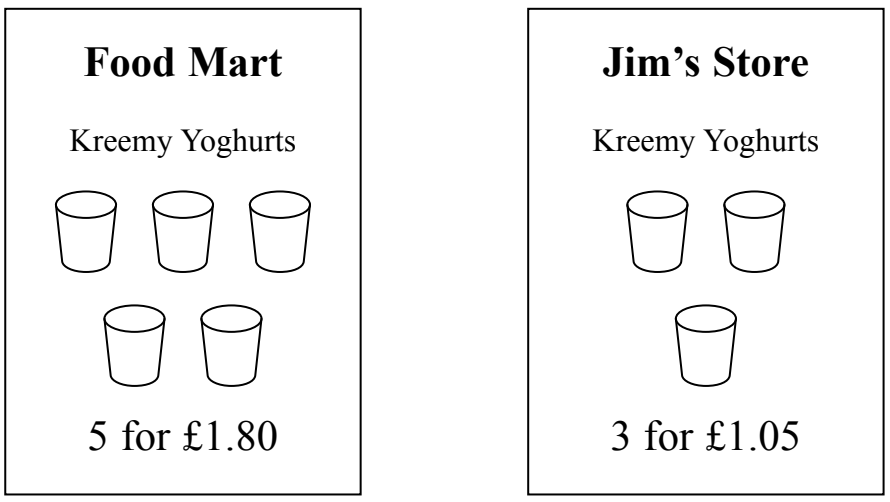
(Total 3 marks)

N 3 7 7 3 2 A 0 1 2 2 0

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Leave blank

15. Two shops, Food Mart and Jim's Store, both sell Kreemy Yoghurts.



At which shop are Kreemy Yoghurts the better value for money?
You must show all your working.

.....

(Total 3 marks)

Q15

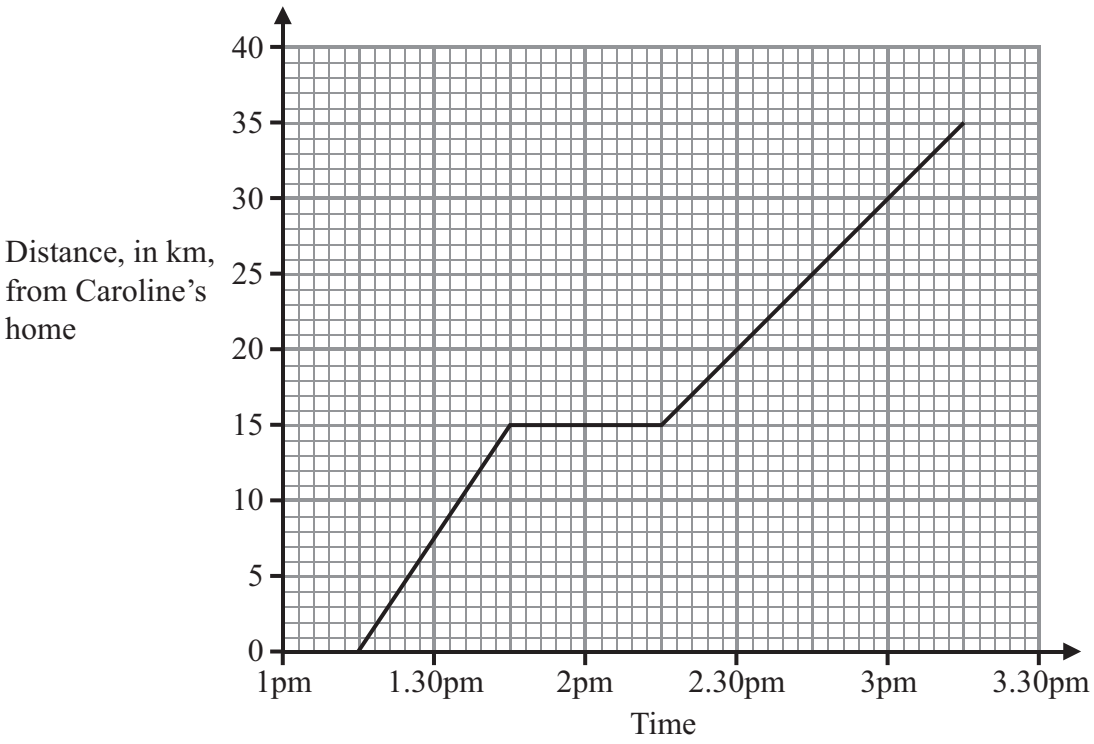
N 3 7 7 3 2 A 0 1 3 2 0

Turn over

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Leave blank

16. Caroline travelled 35 km from her home to her friend's house.
The travel graph represents her journey.



(a) Write down the time that Caroline left home.

.....
(1)

(b) How far was Caroline from her home at 3pm?

..... km
(1)

At 1.45pm Caroline stopped for a rest.

(c) For how many minutes did Caroline rest?

..... minutes
(1)

Q16

(Total 3 marks)

N 3 7 7 3 2 A 0 1 4 2 0

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Leave blank

17. (a) Solve $2x + 3 = 10$

$x =$ .....

(2)

(b) Simplify

(i) $c^5 \times c^6$

.....

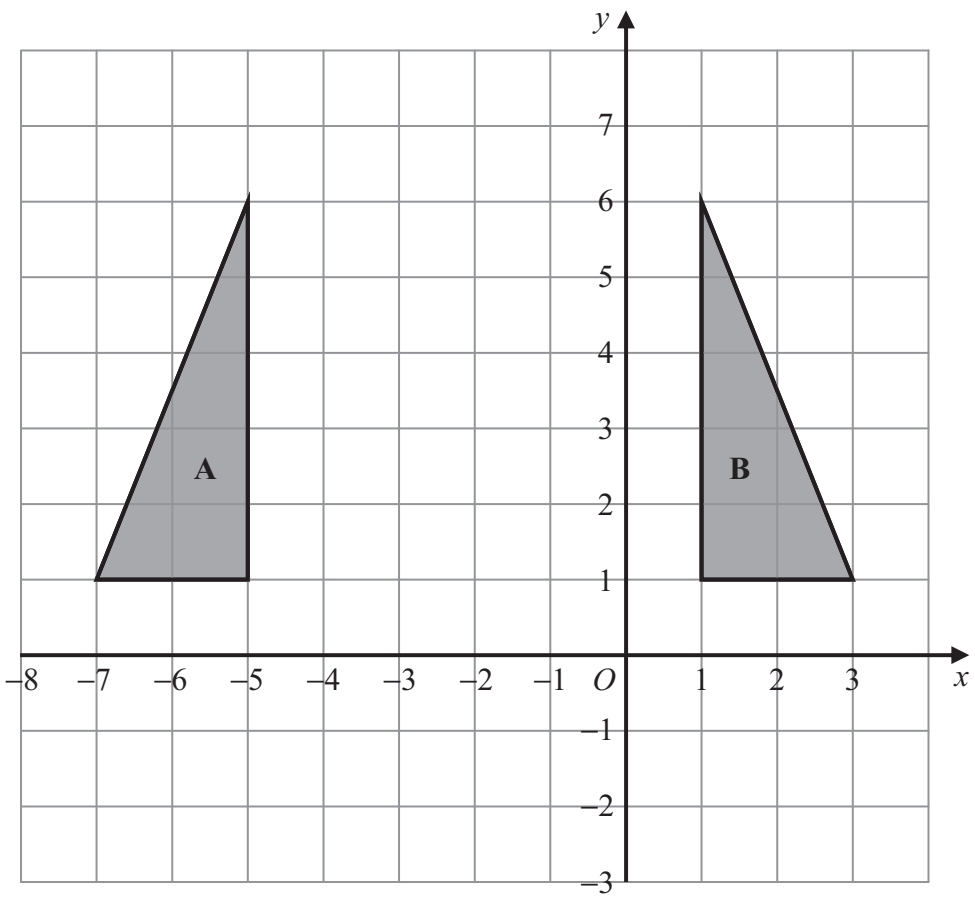
(ii) $e^{12} \div e^4$

.....

(2) **Q17**

(Total 4 marks)

18.



Describe fully the single transformation that will map triangle **A** onto triangle **B**.

.....

.....

Q18

(Total 2 marks)

N 3 7 7 3 2 A 0 1 5 2 0

Turn over

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Leave blank

19. Use your calculator to work out

$$\frac{13.7 + 5.86}{2.54 \times 3.17}$$

Write down all the figures on your calculator display.
You must give your answer as a decimal.

.....

Q19

(Total 2 marks)

20. $W = n^3 - 5$

(a) (i) Work out the value of W when $n = 2$

$W =$ .....

(ii) Work out the value of W when $n = -1$

$W =$ .....

(2)

(b) Raji says

"when $x = 1.5$ the value of $4x^2$ is 36"

He is **wrong**.
Explain why.

.....

.....

(1)

Q20

(Total 3 marks)

N 3 7 7 3 2 A 0 1 6 2 0

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Leave blank

21. Carmen and Dave share £60 in the ratio 3 : 5

Work out how much money they each get.

Carmen £ .....

Dave £ **Q21**

(Total 2 marks)

22.

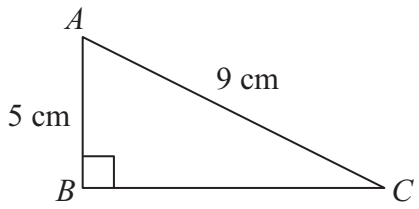


Diagram **NOT** accurately drawn

ABC is a right-angled triangle.
AB = 5 cm.
AC = 9 cm.

Work out the length of *BC*.
Give your answer to 2 decimal places.

..... cm **Q22**

(Total 3 marks)

TOTAL FOR PAPER: 60 MARKS

END

N 3 7 7 3 2 A 0 1 7 2 0

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N 3 7 7 3 2 A 0 1 8 2 0

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N 3 7 7 3 2 A 0 1 9 2 0

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N 3 7 7 3 2 A 0 2 0 2 0

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Mark Scheme (Results)

November 2010

GCSE

GCSE Mathematics (5384F)
Paper 11F

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November 2010

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cao – correct answer only
ft – follow through
isw – ignore subsequent working
SC: special case
dep – dependent
oe – or equivalent (and appropriate)
indep - independent

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If no working is shown then correct answers normally score full marks
If no working is shown then incorrect (even though nearly correct) answers score no marks.

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5384F/11F					
Question		**Working**	**Answer**	**Mark**	**Notes**
1		4 × 1.50 9 ÷ 2 7.98 + '6.00' + 9	6.00 4.50 22.98	1 1 1	B1 cao B1 cao B1 ft from their '6'
2	(i)		6	3	B1 cao
	(ii)		12		B1 cao
	(iii)		8		B1 cao
3	(a)(i)		9	2	B1 cao
	(ii)		12		B1 cao
	(b)		2	2	M1 for 3 × 2 + 4 × −1 oe A1 cao
4	(a)		2 lines marked	2	B2 for correct 2 lines, no extras (B1 for 1 correct line, no extras OR 2 correct lines with both 'diagonals' OR 2 correct lines with 1 extra line
	(b)		3	1	B1 cao
5	(a)		80	1	B1 answer in range 78 – 82
	(b)		7.50	1	B1 answer in range 7.3(0) – 7.7(0)

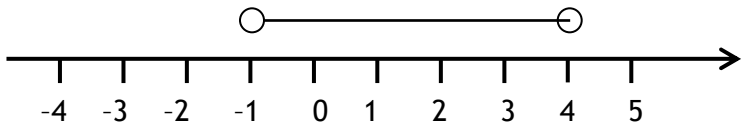
5384F/11F					
Question		**Working**	**Answer**	**Mark**	**Notes**
6	(i)		Cone	2	B1 (accept incorrect spelling if intention is clear)
	(ii)		Cylinder		B1 (accept incorrect spelling if intention is clear)
7		3 ÷ 5	0.6	2	M1 for 3 ÷ 5 or $5\overline{)3.0}$ or $\frac{3}{5}\times 2$ or $\frac{3\times 2}{5\times 2}$ or $\frac{6}{10}$ seen A1 for 0.6
8	(a)(i)		4	2	B1 cao
	(ii)		−2		B1 cao
	(b)(i)		−2	2	B1 cao
	(ii)		12		B1 cao
9			70	3	M1 for $a + a + a - 30$ or $3a - 30$ seen M1 ft for $3a = 210$ or $3a =$ '180' + 30 or $a + a + a = 210$ or $a + a + a =$ '180' + 30 A1 for 70 Note if T & I used then award 3 marks for answer of 70
10	(a)		5	1	B1 cao
	(b)		3	1	B1 cao

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5384F/11F				
Question	**Working**	**Answer**	**Mark**	**Notes**
11 (a)		Midpoint marked	3	B1 for midpoint, tolerance 2mm (overlay)
(b)		Circle with 5 cm radius drawn		B2 for fully correct circle of radius 5 cm centre P or follow through 'P', tolerance of radius 2mm (B1 for a circle with centre 'P' or for a circle of radius 5 cm, tolerance of radius 2mm)
12	150 ÷ 5 = 30 30 × 2 = 60 150 – 60	90	3	M2 for 150 - 2 × 150 ÷ 5 oe or sight of 60 (M1 for $\frac{1}{5}\times 150$ or 150 ÷ 5 or sight of 30) A1 for 90 cao **Alternative 1** M2 for $\frac{3}{5}\times 150$ or 3 × 150 ÷ 5 or 0.6 × 150 (M1 for $\frac{1}{5}\times 150$ or 150 ÷ 5 or sight of 30) A1 for 90 cao **Alternative 2** M2 for $1-\frac{2\times 30}{5\times 30}$ or $1-\frac{60}{150}$ or $\frac{90}{150}$ (M1 for $\frac{2\times 30}{5\times 30}$ or $\frac{60}{150}$) A1 cao

5384F/11F

Question	Working	Answer	Mark	Notes
13	$\frac{4}{100}\times 500$ = 20	40	2	M1 for $\frac{4}{100}\times 500$ oe or $\frac{8}{100}\times 500$ oe or sight of 20 or 520 A1 cao SC B1 for 540
14	451 23 × 1353 9020 10373 400 | 50 | 1 | × 8000 | 1000 | 20 | 20 1200 | 150 | 3 | 3 4 | 5 | 1 | × 8 | 10 | 2 | 2 12 | 15 | 3 | 3 10 | 3 | 7 | 3 | 8000 + 1200 + 1000 + 150 + 20 + 3	10 373	3	M1 for complete method with relative place value correct. Condone 1 multiplication error, addition not necessary. M1 (dep) for addition of all appropriate elements of the calculation A1 cao OR M1 for a complete grid. Condone 1 multiplication error, addition not necessary. M1 (dep) for addition of all appropriate elements of the calculation A1 cao OR M1 for sight of a complete portioning method, condone one multiplication error M1 (dep) for addition of all the appropriate elements of the calculation A1 cao SC B1 for attempting to add exactly 23 lots of 451

5384F/11F					
Question		**Working**	**Answer**	**Mark**	**Notes**
15		540 − 240 = 300 $\frac{15}{100}$ × 300	45	3	M1 for 540 – 240 or 300 seen M1 (dep) for $\frac{15}{100}$ × '300' or correct method for 10% + 5% of '300' A1 cao SC If no marks scored award B1 for an answer of 81 or 36
16	(a)			1	B1 for fully correct answer
	(b)		$-2 < x \leq 3$	2	B2 for fully correct answer (B1 for –2 < or ≤ 3 seen)
	(c)	$3t + 5 > 17$ $3t > 17 - 5$ $3t > 12$	$t > 4$	2	M1 for $3t$ … 17 – 5 or dividing throughout by 3 or sight of 4 or an attempt to move the 5 A1 for $t > 4$ oe
17			B and E	2	B2 for both correct (B1 for 1 correct)
18			1 : 3	2	M1 for writing ratio as 18 : 6 or 6 : 18 or 3 : 1 or 3 : 9 or 9 : 3 or 6 : 2 or 2 : 6 A1 cao

5384F/11F				
Question	**Working**	**Answer**	**Mark**	**Notes**
19	$2\frac{16}{20} - \frac{5}{20}$	$2\frac{11}{20}$	3	M1 for dealing with whole numbers 3 – 1 = 2 M1 for correct common denominator and at least one correct numerator (can be $\frac{16}{20}$ or $\frac{5}{20}$ if 20 used as common denominator) A1 for $2\frac{11}{20}$ oe **Alternative** M1 for $\frac{5\times3+4}{5} - \frac{4\times1+1}{4}$ with at least one correct numerator M1 for correct common denominator and at least one correct numerator (can be $\frac{76}{20}$ or $\frac{25}{20}$ if 20 used as common denominator) A1 for $\frac{51}{20}$ or $2\frac{11}{20}$ oe
20		Correct construction	2	M1 for two pairs of correct intersecting arcs A1 for correct perpendicular bisector SC if no marks, B1 for line within guidelines.
21 (a)			3	B1 for rotation B1 for about (0,0) B1 for 180° (accept half turn) NB If more than one transformation seen than B0
(b)		triangle with vertices (6, 1) (6, 4) (5, 4)	1	B1 cao

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Mark Scheme (Results)

November 2010

GCSE

GCSE Mathematics (5384F)
Paper 12F

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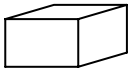
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5384F/12F				
Question	**Working**	**Answer**	**Mark**	**Notes**
1	4.38 + 0.45 + 0.29 + 0.29 = 5.41 10 – 5.41 OR 10 – 4.38 = 5.62 5.62 – 0.45 = 5.17 5.17 – 0.29 = 4.88 4.88 – 0.29	4.59	3	M1 for adding 3 or 4 items with consistent units (eg. 4.38 + 0.45 + 0.29 + 0.29 or 0.45 + 0.29 + 0.29) or digits 541, 512, 103 or 496 seen M1 (dep)for subtracting their total from 10 or 1000 (consistent with their monetary units) or for an answer that when added to their total gives 10 or 1000 A1 for £4.59 or £4.59p or 459p if '£' sign crossed out OR M2 for repeated subtraction from 10 or 1000 of 3 or 4 items with consistent units SC: B2 for digits 459 or 488 or 897 or 504 seen if M0 scored
2			1	B1 for sketch of a cuboid The sketch must be a 3-D configuration with 3 faces (ignoring any hidden definition) of which TWO must be approximately rectangular in shape (or a clear parallelogram within the 3-D drawing) with the third face being a quadrilateral
3 (a)		12.3 cm or 123 mm	2	B1 for 12.1 – 12.5, $12\frac{1}{2}$ or 121 – 125 or $4\frac{14}{16} - 5\frac{1}{16}$ (4.8 to 5.1) B1 for an appropriate sensible unit: cm or mm or inches or for mixed units eg.12cm 3mm
(b)		47 ± 2°	1	B1 for 45 – 49 (could be on the diagram)
(c)		Overlay	1	B1 75° angle drawn within guidelines (accept angle drawn from any point on the given line) [Note: If the given line is not used, award B1 for an angle of 75 (± 2°) drawn anywhere]

5384F/12F					
Question		**Working**	**Answer**	**Mark**	**Notes**
4		29.76 ÷ 32 = 0.93	93	3	M1 for 29.76 ÷ 32 or 2976 ÷ 32 (or digits 93 seen) A1 for 0.93 or 93 B1 ft for answer in pence, provided M1 scored
5	(a)	5.85 × 15	87.75	2	M1 for 5.85 × 15 [This maybe in parts 5.85 × 10 and 5.85 × 5 or repeated addition] A1 for 87.75 (accept £87.75p)
	(b)	134.55 ÷ 5.85 5.85 × 10 = 58.5 5.85 × 10 = 58.5 5.85 × 3 = 17.55 134.55 +	23	2	M1 for 134.55 ÷ 5.85 or digits 23 seen A1 for 23 cao OR M1 for a complete 'chunking' method which attempts to reach the total of 134.55 A1 for 23 cao
6				1	B1 cao [Accept vertices positioned with a tolerance of ± a quarter square from the required points]
7	(a)		$\frac{6}{11}$	1	B1 for $\frac{6}{11}$ or $\frac{12}{22}$ or any equivalent fraction or 0.5454…
	(b)		$\frac{2}{5}$	1	B1 for $\frac{2}{5}$ or $\frac{4}{10}$ or any equivalent fraction or 0.4

5384F/12F					
Question		Working	Answer	Mark	Notes
8	(a)		A and E	1	B1 for A and E or E and A
	(b)		2	1	B1 for 2 or x2 or times 2 or 2x or 2 times
9	(a)		50	1	B1 cao
	(b)		$\frac{1}{5}$	2	B2 for $\frac{1}{5}$ cao (B1 for 20/100 or 2 /10 or 4/20 or for any equivalent fraction or for 0.2 or 0.20)
	(c)		7.32	1	B1 for £7.32 or £7.32p (accept 732p if '£' sign crossed out)
10	(a)		5	1	B1 for 5 oe (accept $\frac{30}{6}$)
	(b)		3	1	B1 cao
11			Overlay	2	B2 for rectangle within guidelines (B1 for a line of length 4cm or 7cm or for a correct scale drawing using a scale of 1cm to 10m, giving a 2 cm by 3.5 cm rectangle or a scale of 2cm to 5m, giving a 8 cm by 14 cm rectangle)

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5384F/12F					
Question		**Working**	**Answer**	**Mark**	**Notes**
12		5986 – 4176 = 1810 1810 × 13.9 = 25159 5986 × 13.9 = 832.054 4176 × 13.9 = 580.464 832.054 – 580.464	£251.59	4	M1 for 5986 – 4176 (=1810) M1 (dep) for '1810' × 13.9 or '1810' × 0.139 OR M1 for 5986 × 13.9 (or × 0.139) **and** 4176 × 13.9 (or × 0.139) M1 (dep) for '832.054' – '580.464' A2 for £251.59 or 25159p (A1 for digits 25159 and no units)
13	(a)		Glasgow	1	B1 for Glasgow or −8
	(b)	3 – (– 2)	5	1	B1 for 5 (accept −5)
	(c)	–5 + 7	2	1	B1 cao
14	(i)	360 – (120+100+75)	65	3	M1 for 360 – (120+100+75) or 360 – 295 or 120 + 100 + 75 + *x* = 360 A1 cao
	(ii)		reason		B1 for sum of angles (corners) in a quadrilateral (4-sided shape) is 360°

5384F/12F				
Question	**Working**	**Answer**	**Mark**	**Notes**
15	180 ÷ 5 = 36 105 ÷ 3 = 35 5 ÷ 1.80 = 2.777… 3 ÷ 1.05 = 2.857… Alternative: FM: 10 pots = 1.80 × 2 = 3.60 JS: 10 pots = 1.05 × 3 + 1.05 ÷ 3 = 3.50	Jim's store with reason	3	M1 for 180 ÷ 5 oe or 105 ÷ 3 oe or 36 or 35 oe seen A1 for 36 and 35 or 0.36 and 0.35 OR M1 for 180 ÷ 5 oe or 180 × 3 oe or 36 or 540 oe seen A1 for 108 or 1.08 OR M1 for 105 ÷ 3 oe or 105 × 5 oe or 35 or 525 oe seen A1 for 175 or 1.75 OR M1 for 180 × 3 oe or 105 × 5 oe or 540 or 525 oe seen A1 for 540 and 525 or 5.4(0) and 5.25 OR M1 for 5 ÷ 1.80 oe or 3 ÷ 1.05 oe or 2.777… or 2.857… oe seen A1 for 2.7(7..)and 2.8(57..) oe OR Alternative method (provided the same number of pots are considered from each shop) M1 for 1.80 × 2 oe or 1.05 × 3 + 1.05 ÷ 3 oe or 3.6(0) or 3.5(0) oe seen A1 for 3.6(0) and 3.5(0) oe PLUS A1 for a correct decision based upon their values provided M1 scored Note: units can be ignored

5384F/12F				
Question	**Working**	**Answer**	**Mark**	**Notes**
16 (a)		1.15(pm)	1	B1 for 1.15 or 1315 or equivalent
(b)		30	1	B1 cao
(c)		30	1	B1 cao
17 (a)	$2x = 10 - 3 = 7$ $x = 7 \div 2$	3.5	2	M1 for $2x = 10 - 3$ oe or $2x = 7$ oe or $(10 - 3) \div 2$ A1 for 3.5 oe (accept $\frac{7}{2}$)
(b)(i)		c^{11}	2	B1 accept c^{5+6}
(ii)		e^{8}		B1 accept e^{12-4}
18		reflection $x = -2$	2	B1 for reflection B1 for $x = -2$ [Note any combination of two or more transformations gets B0B0]
19		2.4292(70474)	2	B2 for 2.42927….. (B1 for 19.56 or 8.0518 seen or 2.43 or 2.429 or 2.4292 or 2.4293 or digits 242927… or for an equivalent exact fraction, eg $\frac{97800}{40259}$)

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5384F/12F				
Question	**Working**	**Answer**	**Mark**	**Notes**
20 (a)	(i) $(2)^3-5 = 8-5$ (ii) $(-1)^3-5 = -1-5$	3 -6	2	B1 cao B1 cao
(b)		reason	1	B1 for example: ' he has worked out $4 \times x$ first' or 'the answer is 9' or 'when x =3, $4x^2 = 36$'
21	$60 \div (3+5)= 7.5$ $3 \times 7.5 = 22.5$ $5 \times 7.5 = 37.5$ OR 3 5 6 10 9 15 12 20 15 25 18 30 21 35	Carmen = 22.50 Dave = 37.50	2	M1 for $60 \div (3+5)$ or 7.5 or 22.5 or 37.5 seen A1 for C = 22.50 and D = 37.50 (accept C = 22.5 and D = 37.5) OR M1 for lists going down as far as 21 35 (ignore any further listings) A1 for C = 22.50 and D = 37.50 (accept C = 22.5 and D = 37.5) [Note: 21 and 35 seen with no working (lists) gets NO marks]
22	$BC^2 + 5^2 = 9^2$ $9^2 - 5^2 = 56$ $BC = \sqrt{56}$	7.48(3314774)	3	M1 for correct use of Pythagoras or 56 seen M1 (dep) for $\sqrt{"(9^2-5^2)"}$ A1 for 7.48 to 7.485 [Note: Condone incorrect rounding after sight of a correct answer]

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Candidate No.						5	3	8	4	F	/	1	1	F	Signature

Paper Reference(s)

5384F/11F

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Team Leader's use only

Edexcel GCSE

Mathematics (Modular) – 2381

Paper 11 (Non-Calculator)

Foundation Tier



Unit 3

Monday 7 June 2010 – Afternoon

Time: 1 hour

Materials required for examination
Ruler graduated in centimetres and millimetres, protractor, compasses, pen, HB pencil, eraser.
Tracing paper may be used.

Items included with question papers
Nil

Instructions to Candidates

In the boxes above, write your centre number, candidate number, your surname, initials and signature.
Check that you have the correct question paper.
Answer ALL the questions. Write your answers in the spaces provided in this question paper.
You must NOT write on the formulae page.
Anything you write on the formulae page will gain NO credit.
If you need more space to complete your answer to any question, use additional answer sheets.

Information for Candidates

The marks for individual questions and the parts of questions are shown in round brackets: e.g. **(2)**.
There are 18 questions in this question paper. The total mark for this paper is 60.
There are 16 pages in this question paper. Any blank pages are indicated.
Calculators must not be used.

Advice to Candidates

Show all stages in any calculations.
Work steadily through the paper. Do not spend too long on one question.
If you cannot answer a question, leave it and attempt the next one.
Return at the end to those you have left out.

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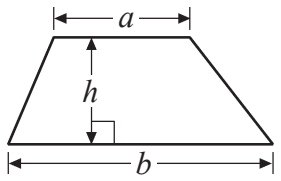
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GCSE Mathematics

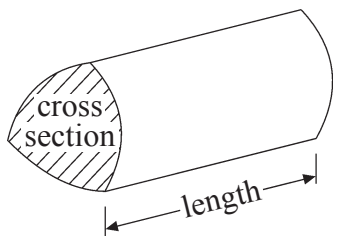
Formulae: Foundation Tier

You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.

Area of trapezium = $\frac{1}{2}(a + b)h$



Volume of prism = area of cross section × length



N 3 6 8 0 9 A 0 2 1 6

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Leave blank

Answer ALL EIGHTEEN questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

You must NOT use a calculator.

1. (a) Work out 203 – 87

.....

(1)

(b) Work out – 5 – 6

.....

(1)

(c) Work out 6.41 + 0.36

.....

(1)

(d) Work out 100 ÷ 20

.....

(1) **Q1**

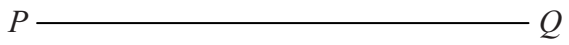
(Total 4 marks)

N 3 6 8 0 9 A 0 3 1 6

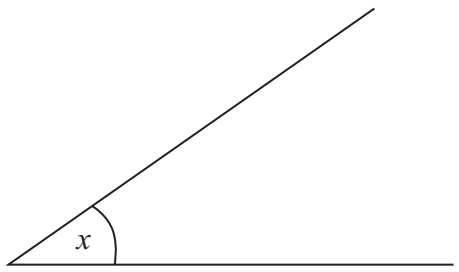
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Leave blank

2. (a) Measure the length of PQ.
Give your answer in centimetres.



..... cm
(1)



(b) Measure the size of angle x.

..... °
(1)

Q2

(Total 2 marks)

3. Jim took an English test and a mathematics test.

He got 44 out of 50 in his English test.

(a) Write 44 out of 50 as a fraction.
Give your answer in its simplest form.

.....
(2)

Jim got 33 out of 50 in his mathematics test.

(b) What is 33 out of 50 as a percentage?

..... %
(2)

Q3

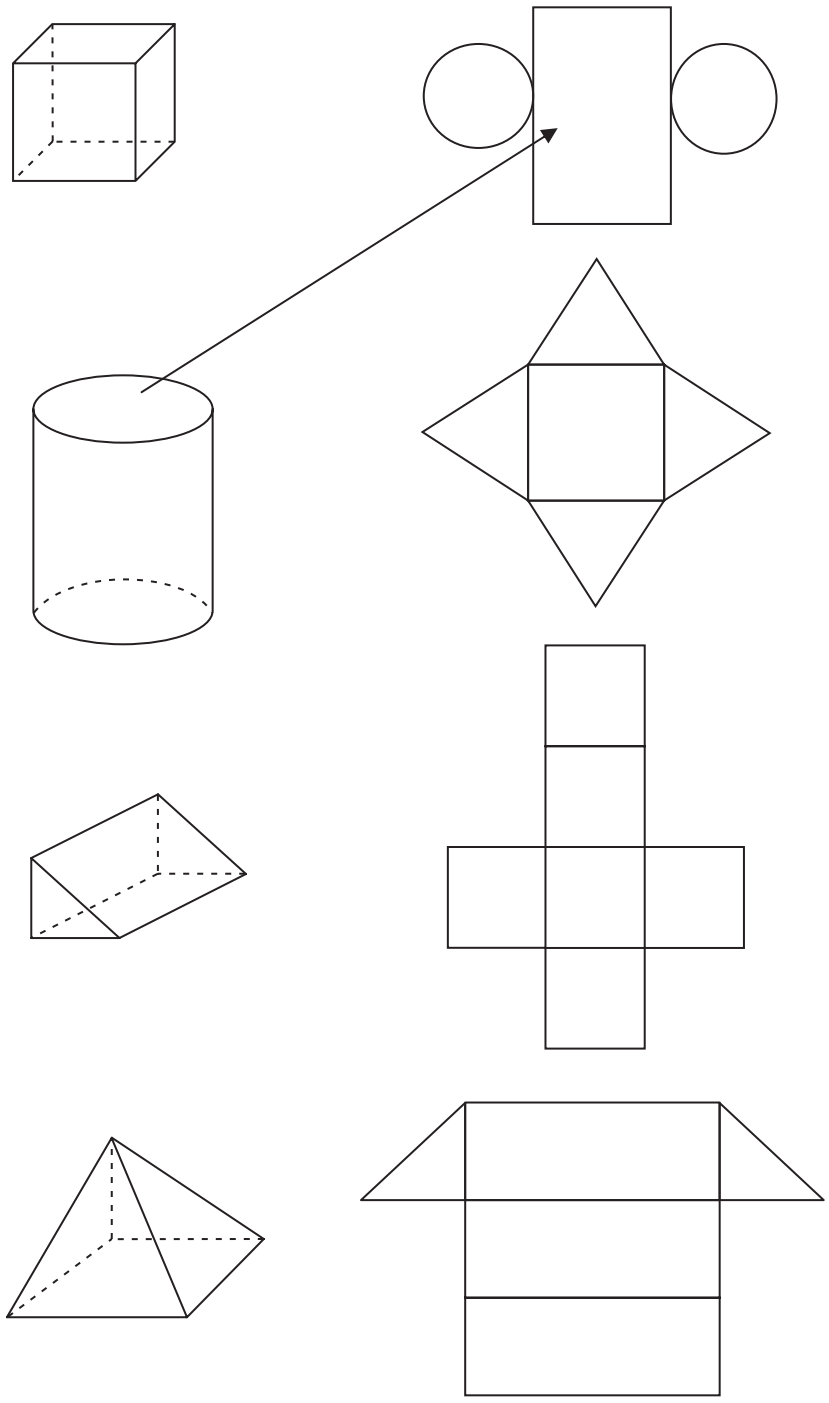
(Total 4 marks)

N 3 6 8 0 9 A 0 4 1 6

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Leave blank

4.



Diagrams **NOT** accurately drawn

The diagram shows 4 solid shapes and their nets.

Draw an arrow from each solid shape to its net.
One arrow has been done for you.

Q4

(Total 2 marks)

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5. Jo thinks of a number.

She multiplies this number by 2
She then adds 12

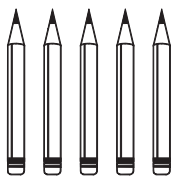
Her answer is 42

What number did Jo think of first?

..... **Q5**

(Total 2 marks)

6. The total cost of 5 pencils is 55p.



Work out the total cost of 7 of these pencils.

..... p **Q6**

(Total 2 marks)

N 3 6 8 0 9 A 0 6 1 6

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Leave blank

7.



Bag A Bag B Bag C

Here are three bags of counters.

There are x counters in Bag A.

Bag B has **twice** as many counters as Bag A.

Bag C has the **same** number of counters as Bag A.

(a) Show that the total number of counters in the bags is $4x$.

(1)

The total number of counters in the bags is 28

(b) Find the value of x.

$x =$ .....

(2)

Q7

(Total 3 marks)

N 3 6 8 0 9 A 0 7 1 6

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8. Here is a sketch of a cuboid.

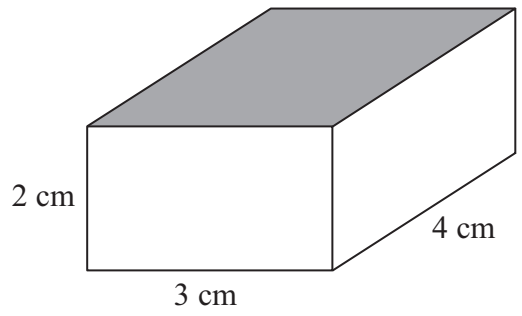
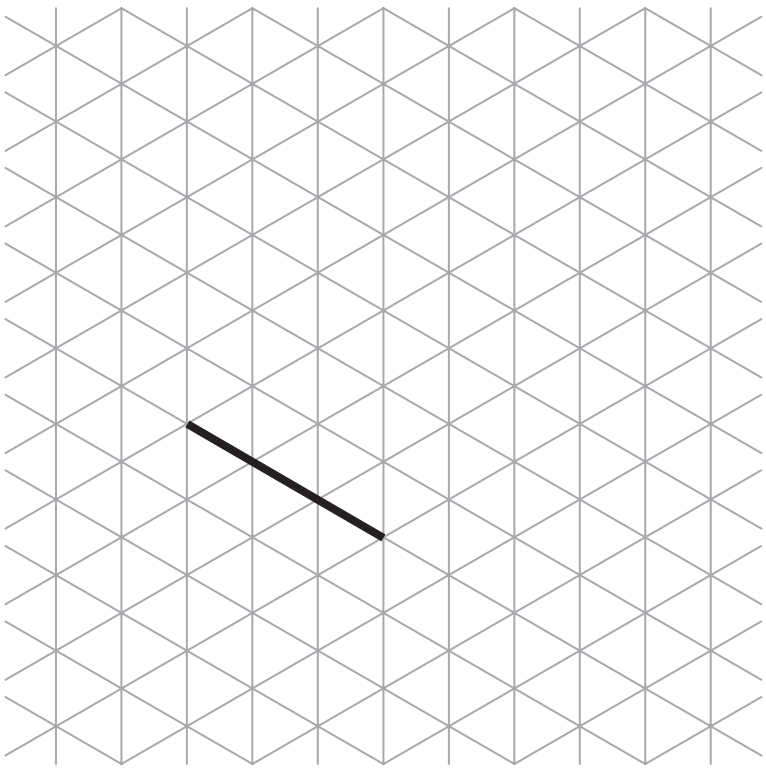


Diagram **NOT** accurately drawn

(a) On the isometric grid below, make an accurate drawing of this cuboid.
One edge has been drawn for you.



(2)

(b) Work out the area of the top face of the cuboid.

..... cm^2

(2)

Q8

(Total 4 marks)

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Leave blank

9. The table shows some information about boxes of cereal on sale in a supermarket.

Cereal	Weight of 1 box	Cost of 1 box
Coco Pops	600 g	£2.79
Frosties	500 g	£1.55
Rice Krispies	600 g	£2.43
Shreddies	500 g	£1.85

Flossie buys one of each box of cereal.

(a) Work out the total weight of these boxes of cereal.
Give your answer in kg.

..... kg
(3)

Ed buys

one box of Coco Pops
and **two** boxes of Shreddies.

(b) How much money in total does Ed spend?

£.....
(2)

(Total 5 marks)

Q9

N 3 6 8 0 9 A 0 9 1 6

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10. (a) Simplify $m \times m \times m$

.....

(1)

$B = 2k + 12$

$k = 5$

(b) Work out the value of B.

$B =$ .....

(2)

$T = 4w - 2$

$T = 22$

(c) Work out the value of w.

$w =$ .....

(2) **Q10**

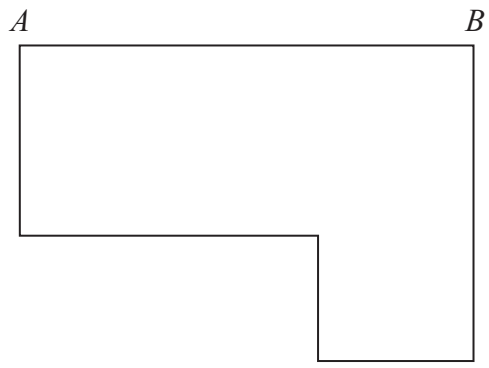
(Total 5 marks)

N 3 6 8 0 9 A 0 1 0 1 6

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11. Here is a scale drawing of the floor of a hall.
A and *B* are two corners of the floor.



Scale: 1 cm represents 4 metres

On the scale drawing $AB = 6$ cm.

(a) Work out the real distance from *A* to *B*.

..... m
(2)

Ken makes a new scale drawing of the hall.

On his scale drawing $AB = 12$ cm.

(b) Work out the new scale Ken uses.

New Scale: 1 cm represents ..... m
(2)

(Total 4 marks)

Q11

N 3 6 8 0 9 A 0 1 1 1 6

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12.

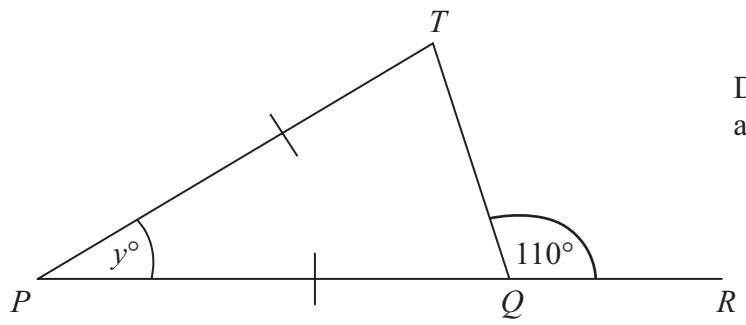


Diagram **NOT** accurately drawn

PQR is a straight line.
PT = *PQ*.

(i) Work out the value of *y*.

.....

(ii) Give reasons for your answer.

.....

.....

.....

(Total 4 marks)

Q12

N 3 6 8 0 9 A 0 1 2 1 6

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13. There are 300 people in a cinema.

$\frac{1}{6}$ of the 300 people are boys.

$\frac{3}{10}$ of the 300 people are girls.

The rest of the people are adults.

Work out how many people are adults.

.....

(Total 4 marks)

Q13

14. Anna and Bill share £40 in the ratio 2 : 3

Work out how much each person gets.

Anna £.....

Bill £.....

(Total 3 marks)

Q14

N 3 6 8 0 9 A 0 1 3 1 6

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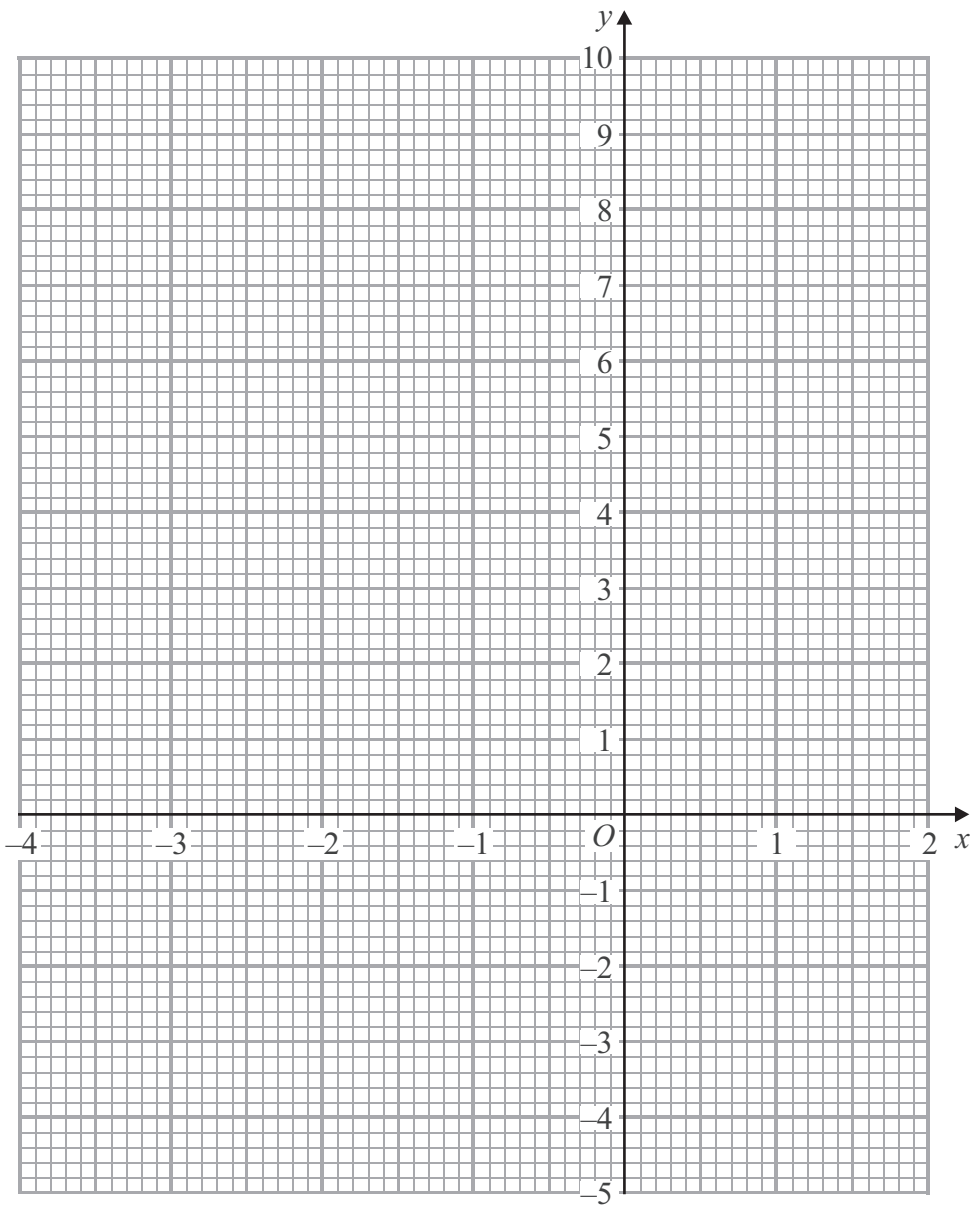
15. (a) Complete the table of values for $y = x^2 + x - 3$

x	–4	–3	–2	–1	0	1	2
y	9		–1	–3			3

(2)

(b) On the grid below, draw the graph of $y = x^2 + x - 3$ for values of x from –4 to 2

(2)



N 3 6 8 0 9 A 0 1 4 1 6

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(c) Use your graph to find estimates for the solutions of $x^2 + x - 3 = 0$

$x =$ .....

$x =$ .....

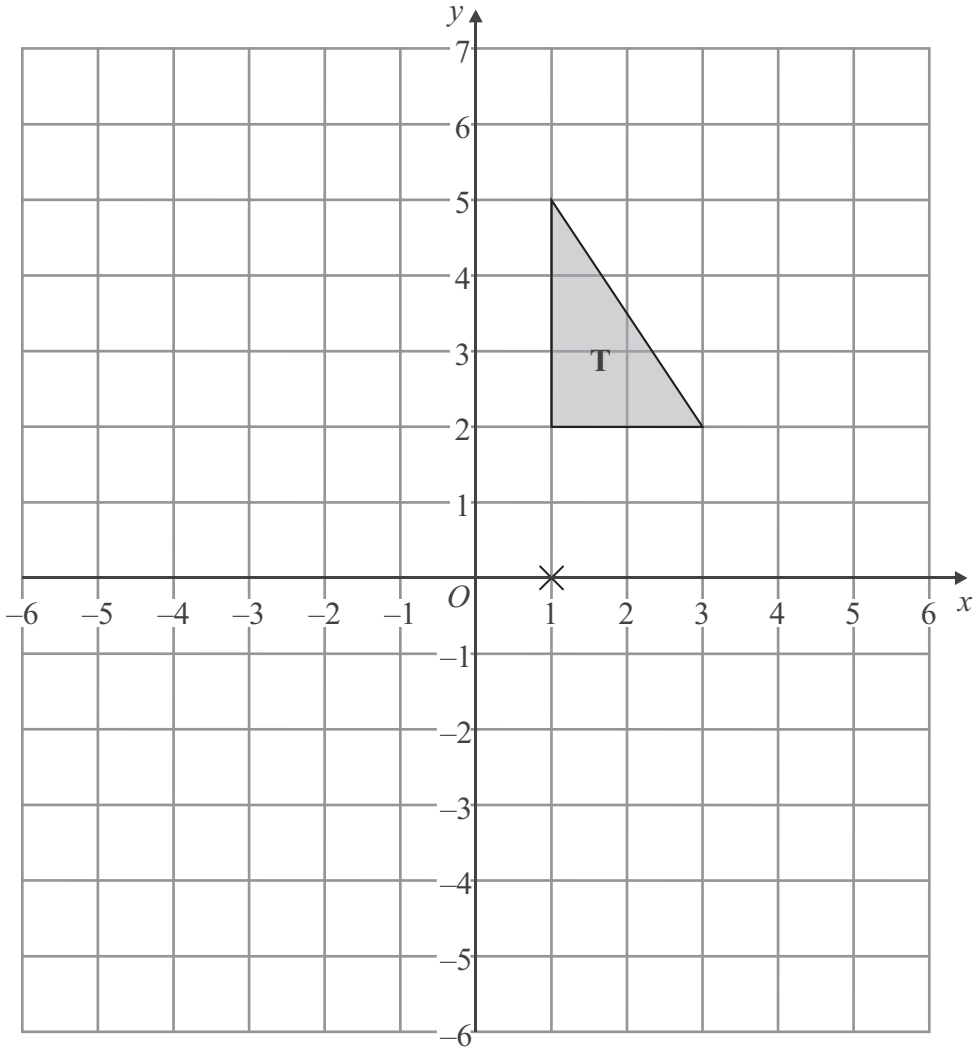
(1)

(Total 5 marks)

Leave blank

Q15

16.



Triangle **T** has been drawn on the grid.

Rotate triangle **T** 180° about the point (1, 0).
Label the new triangle **A**.

Q16

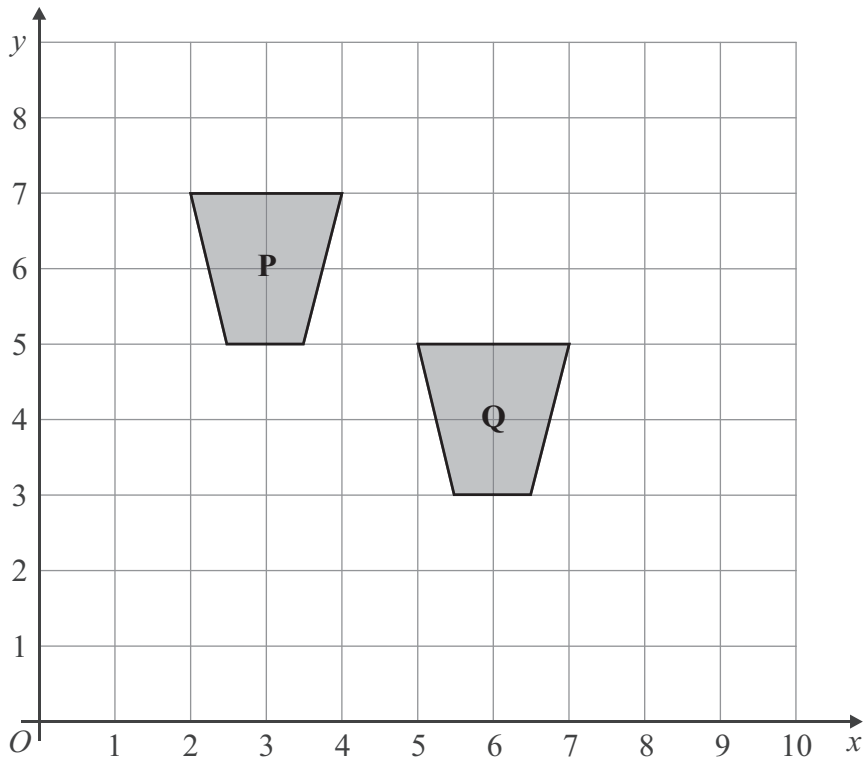
(Total 2 marks)

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17.



Describe fully the single transformation which maps shape **P** onto shape **Q**.

.....

.....

Q17

(Total 2 marks)

18. Solve $4(2x - 3) = 5x + 7$

Q18

$x =$ .....

(Total 3 marks)

TOTAL FOR PAPER: 60 MARKS

END

N 3 6 8 0 9 A 0 1 6 1 6

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Centre No.						Paper Reference								Surname	Initial(s)
Candidate No.						5	3	8	4	F	/	1	2	F	Signature

Paper Reference(s)

5384F/12F

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Edexcel GCSE

Mathematics (Modular) – 2381

Paper 12 (Calculator)

Foundation Tier



Unit 3

Friday 11 June 2010 – Morning

Time: 1 hour

Materials required for examination
Ruler graduated in centimetres and millimetres, protractor, compasses, pen, HB pencil, eraser, calculator.
Tracing paper may be used.

Items included with question papers
Nil

Instructions to Candidates

In the boxes above, write your centre number, candidate number, your surname, initials and signature.
Check that you have the correct question paper.
Answer ALL the questions. Write your answers in the spaces provided in this question paper.
You must NOT write on the formulae page.
Anything you write on the formulae page will gain NO credit.
If you need more space to complete your answer to any question, use additional answer sheets.

Information for Candidates

The marks for individual questions and the parts of questions are shown in round brackets: e.g. **(2)**.
There are 19 questions in this question paper. The total mark for this paper is 60.
There are 16 pages in this question paper. Any blank pages are indicated.
Calculators may be used.
If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.

Advice to Candidates

Show all stages in any calculations.
Work steadily through the paper. Do not spend too long on one question.
If you cannot answer a question, leave it and attempt the next one.
Return at the end to those you have left out.

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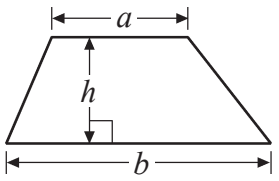
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GCSE Mathematics

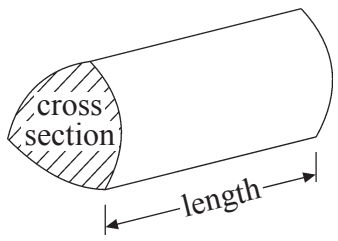
Formulae: Foundation Tier

You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.

Area of trapezium = $\frac{1}{2}(a + b)h$



Volume of prism = area of cross section × length



N 3 6 8 1 0 A 0 2 1 6

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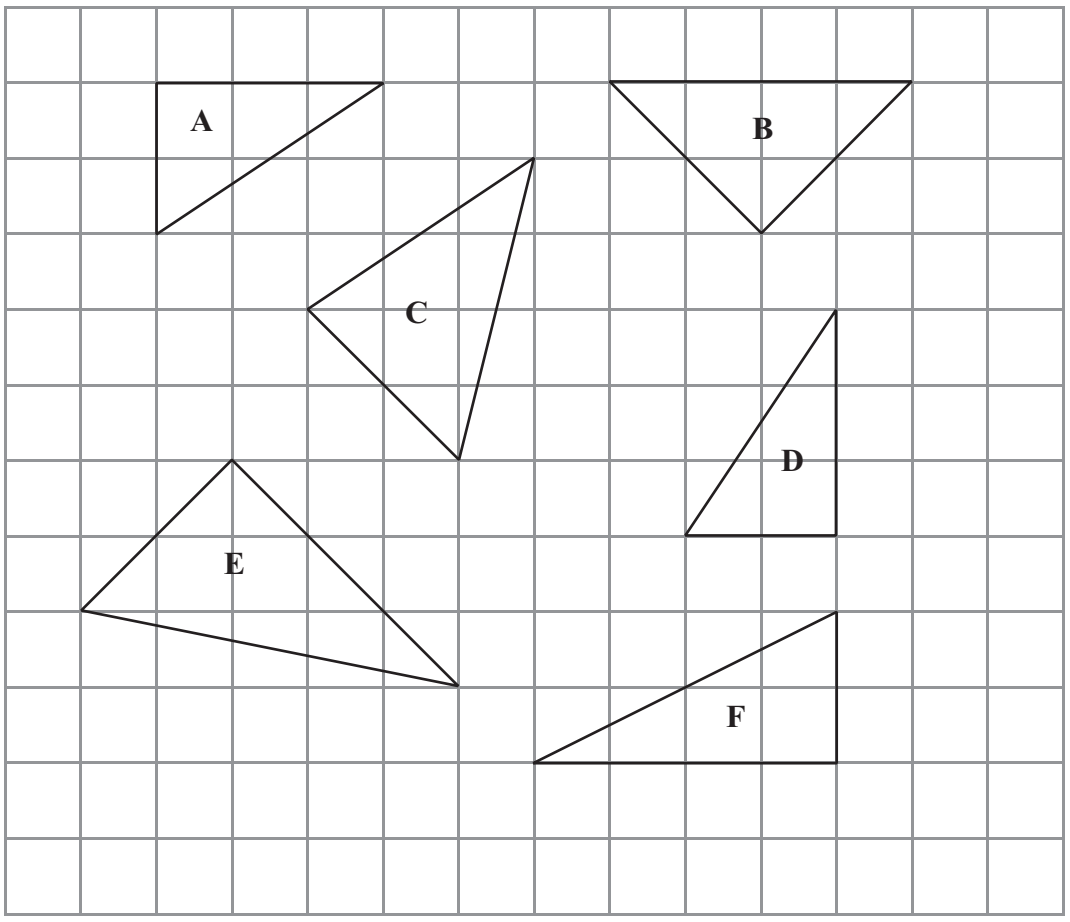
Leave blank

Answer ALL NINETEEN questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

1.



(a) Write down the letters of the two triangles which are congruent.

..... and .....

(1)

(b) Write down the letter of the isosceles triangle.

.....

(1)

(Total 2 marks)

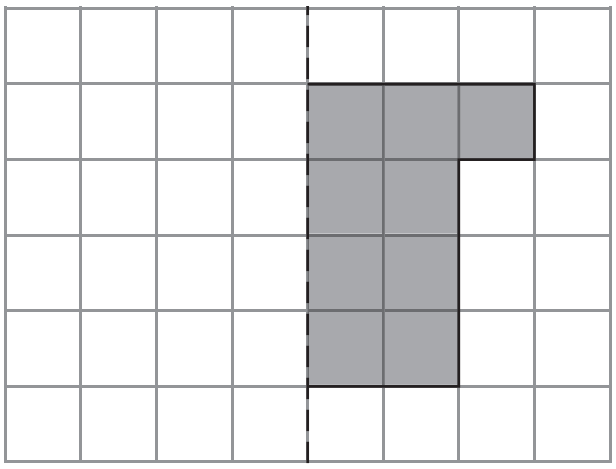
Q1

N 3 6 8 1 0 A 0 3 1 6

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2.



Mirror line

Reflect the shaded shape in the mirror line.

Q2

(Total 1 mark)

3.

Length 6 inches

Width 4 inches

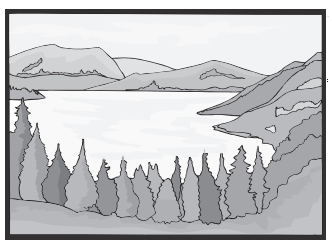


Diagram **NOT** accurately drawn

The length of the photograph is 6 inches.
The width of the photograph is 4 inches.

The photograph is to be enlarged by scale factor 2

Work out the length and the width of the enlarged photograph.

Length ..... inches

Width ..... inches

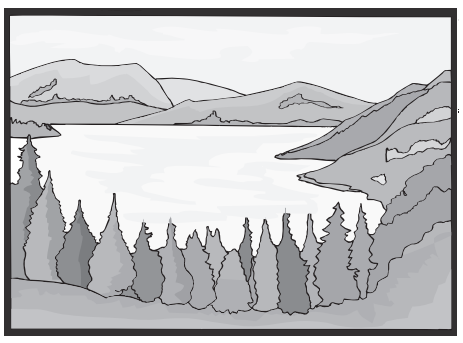


Diagram **NOT** accurately drawn

Q3

(Total 2 marks)

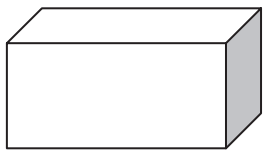
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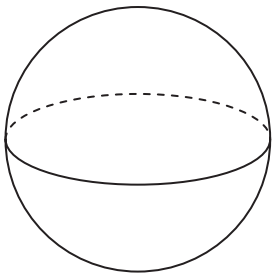
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4. Write down the mathematical name for each of these 3-D shapes.

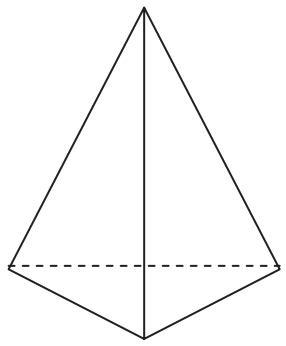
(i)



(ii)



(iii)

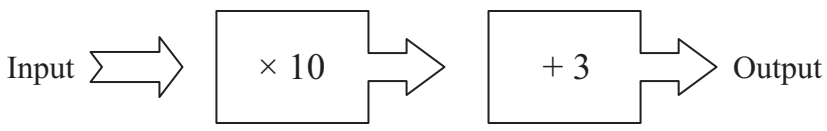


(i) ..... (ii) ..... (iii) .....

Q4

(Total 3 marks)

5. Here is a two-stage number machine.
It multiplies by 10 and then adds 3



Complete the table.

Input	Output
1	13
2	23
5	.....
8	83
.....	103

Q5

(Total 2 marks)

N 3 6 8 1 0 A 0 5 1 6

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6. Draw a circle of radius 5 cm.
Use the point O, marked with a ($\times$), as the centre of your circle.

$\times\ O$

Q6

(Total 1 mark)

7. (a) Write $\frac{3}{4}$ as a percentage.

..... %
(1)

(b) Work out 10% of 60

.....
(2)

(c) Work out $\frac{3}{5}$ of 40

.....
(2)

Q7

(Total 5 marks)

N 3 6 8 1 0 A 0 6 1 6

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8. The table shows the temperatures, in London, at different times on New Years Day, 2008

Time of day	Temperature
6 am	−3°C
10 am	0°C
noon	2°C
2 pm	5°C
6 pm	4°C
10 pm	−1°C

(a) Write down the lowest temperature.

..... °C
(1)

(b) Work out the difference in temperature between 6 pm and 10 pm.

..... °C
(1)

From 10 pm to midnight the temperature fell by 3°C from –1°C.

(c) What was the temperature at midnight?

..... °C
(1)

Q8

(Total 3 marks)

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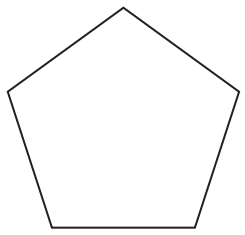
9. Here is a rectangle.



(a) Draw all the lines of symmetry of this rectangle.

(2)

Here is a regular pentagon.

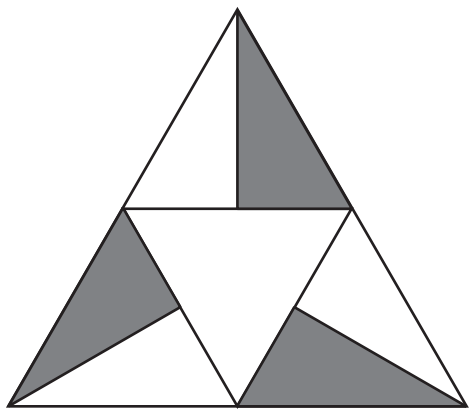


(b) Write down the order of rotational symmetry of this regular pentagon.

.....

(1)

Here is a shape.



(c) Write down the order of rotational symmetry of this shape.

.....

(1)

Q9

(Total 4 marks)

N 3 6 8 1 0 A 0 8 1 6

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Leave blank

10. Tulips cost 85p each.
Sara has £20 to spend on tulips.
She buys the greatest possible number of tulips.

(a) Work out the number of tulips Sara buys.

..... tulips
(2)

Sara pays with a £20 note.

(b) Work out how much change Sara should get.

..... p
(2)

Q10

(Total 4 marks)

N 3 6 8 1 0 A 0 9 1 6

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11. Here is part of a train timetable for six trains from Birmingham to London.

Train	**A**	**B**	**C**	**D**	**E**	**F**
Birmingham	06 35	07 00	07 15	07 30	07 45	08 00
London	08 09	08 39	08 48	09 04	09 59	09 39

(a) Which train takes more than 2 hours to go from Birmingham to London?

.....

(1)

(b) Work out the number of **minutes** taken by train **D** to go from Birmingham to London.

..... minutes

(2)

Paula has to go to a meeting in London.
She will catch one of the six trains from Birmingham.
She needs to arrive in London before 09 00

(c) Write down the latest train that she can catch.

.....

(1)

Q11

(Total 4 marks)

N 3 6 8 1 0 A 0 1 0 1 6

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Leave blank

12. This rule is used to work out the total charge for hiring any ladder.

Total charge = £20 plus £5 for each day of hire

Esme hired a ladder for 6 days.

(a) Work out the total charge.

£ .....

(2)

William hired a different ladder.
The total charge was £65

(b) Work out the number of days William hired the ladder for.

..... days

(3)

Q12

(Total 5 marks)

N 3 6 8 1 0 A 0 1 1 1 6

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Leave blank

13. Here is a sketch of a triangle.

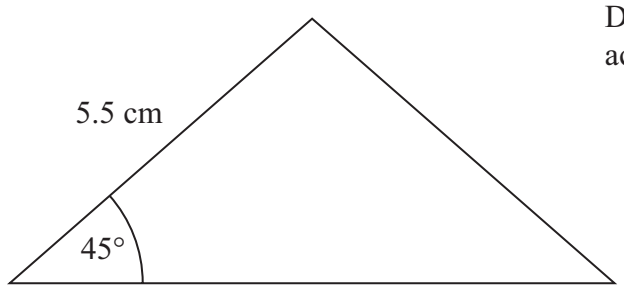


Diagram **NOT** accurately drawn

In the space below, make an accurate drawing of this triangle.
The 9 cm line has been drawn for you.

Q13

(Total 2 marks)

14. (a) Solve $8x - 3 = 17$

$x =$ .....

(2)

(b) Solve $\frac{2y}{3} = 9$

$y =$ .....

(2)

Q14

(Total 4 marks)

N 3 6 8 1 0 A 0 1 2 1 6

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Leave blank

15. A school has 4 new televisions.
It has 12 old televisions.

(a) Write, as a ratio, the number of new televisions to the number of old televisions.
Give your ratio in its simplest form.

.....

(2)

The price of a new television is £400
The school gets 15% off the price of this new television.

(b) Work out how much the school pays for this television.

£.....

(2)

Q15

(Total 4 marks)

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Leave blank

16. In August 2008, Eddie hired a car in Italy.

The cost of hiring the car was £620
The exchange rate was £1 = €1.25

(a) Work out the cost of hiring the car in euros (€).

€ .....

(2)

Eddie bought some perfume in Italy.

The cost of the perfume in Italy was €50
The cost of the same perfume in London was £42

The exchange rate was still £1 = €1.25

(b) Work out the difference between the cost of the perfume in Italy and the cost of the perfume in London.
Give your answer in pounds (£).

£ .....

(3)

Q16

(Total 5 marks)

N 3 6 8 1 0 A 0 1 4 1 6

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Leave blank

17. The equation

$$x^3 + 10x = 25$$

has a solution between 1 and 2

Use a trial and improvement method to find this solution.
Give your answer correct to one decimal place.
You must show **all** your working.

$x =$ .....

(Total 4 marks)

Q17

18. A circle has a diameter of 12 cm.

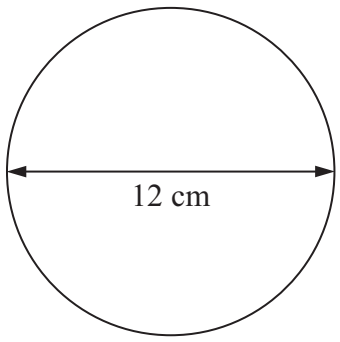


Diagram **NOT** accurately drawn

Work out the circumference of the circle.
Give your answer correct to 1 decimal place.

..... cm

(Total 2 marks)

Q18

N 3 6 8 1 0 A 0 1 5 1 6

Turn over

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Leave blank

19.

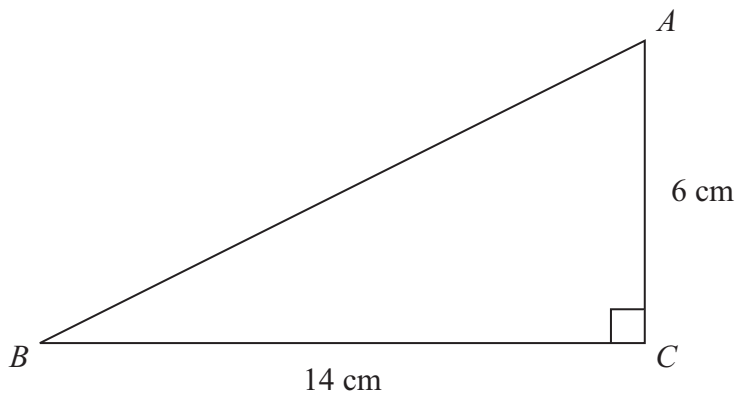


Diagram **NOT** accurately drawn

ABC is a right-angled triangle.
AC = 6 cm.
BC = 14 cm.

Calculate the length of *AB*.
Give your answer correct to 2 decimal places.

..... cm

Q19

(Total 3 marks)

TOTAL FOR PAPER: 60 MARKS

END

N 3 6 8 1 0 A 0 1 6 1 6

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Summer 2010

GCSE

GCSE Mathematics (5384F)
Non-Calculator Paper 11F

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Summer 2010
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5384F/11F					
Question		**Working**	**Answer**	**Mark**	**Notes**
1	(a)		116	1	B1 cao
	(b)		−11	1	B1 cao
	(c)		6.77	1	B1 cao
	(d)		5	1	B1 cao
2	(a)		6.5	1	B1 for 6.5 ± 0.2
	(b)		35	1	B1 for 35 ± 2
3	(a)	$\frac{44}{50}$	$\frac{22}{25}$	2	M1 for $\frac{44}{50}$ A1 for $\frac{22}{25}$ cao
	(b)	$\frac{33}{50} \times 100$	66	2	M1 for $\frac{33}{50} \times 100$ o.e. A1 cao or M1 for attempt to write 33 out of 50 as a fraction out of 100 or a decimal eg $\frac{33}{50} \times \frac{2}{2}$ or $\frac{66}{100}$ or 0.66 A1 cao

Question	Working	Answer	Mark	Notes
4		L1R3 (L2R1) L3R4 L4R2	2	B2 for all correct (B1 for 1 correct)
5	$42-12=30$ $30\div 2=15$	15	2	M1 for $42-12\div 2$ oe A1 cao or M1 for $2x+12=42$ oe A1 cao or M1 for a correctly labelled flow diagram/number machine A1 cao SC B1 for 9
6	55 ÷ 5 = 11, 11 × 7 or 55 × 7 = 385, 385 ÷ 5	77	2	M1 for 55 ÷ 5 or 11 seen or 5 × 7 or 385 seen A1 for 77 or £0.77(p)
7 (a)	$2x+x+x$	Explanation	1	B1 for $2x+x+x$ oe seen
(b)		7	2	M1 for $28\div 4$ oe or $4x = 28$ A1 cao

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Question	Working	Answer	Mark	Notes
8 (a)		Accurate drawing	2	B2 cao (any orientation) ± 2mm (B1 for any isometric drawing of a cuboid) Ignore presence of hidden lines
(b)	3×4	12	2	M1 for a correct method to find the area of one 'face' of the cuboid A1 cao or ft from (a)
9 (a)	$600 + 500 + 600 + 500 = 2200$	2.2(00)	3	M1 for Σ weights or digits 22 M1 for '2200' ÷ 1000 A1 for 2.2(00) or 2 kg 200g
(b)	$2.79 + 1.85 + 1.85 = 6.49$	6.49	2	M1 for 2.79 + 1.85 + 1.85 oe or $279 + 185 + 185$ oe or 649 seen A1 for 6.49 SC B1 for 4.64
10 (a)		m^3	1	B1 cao
(b)	$2 \times 5 + 12$	22	2	M1 for 2×5 or 10 seen A1 cao
(c)	$22 = 4w - 2$ $w = (22 + 2) \div 4$	6	2	M1 for 22 = 4w – 2 or 22 + 2 ÷ 4 oe A1 cao

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Question	Working	Answer	Mark	Notes
11 (a)	4×6	24	2	M1 for 4×6 A1 cao
(b)	$24 \div 6 = 4$ $4 \div 2 = 2$	2	2	M1 for '24' ÷ 6 ÷ 2 oe eg '24' ÷ 12 A1 (ft)
12 (i)	180 – 110 = 70 180 – 2 × 70	40	4	M1 for 180 – 110 or 70 seen M1 for 180 – 2 × "70" or 110 – '70' A1 cao
(ii)		Reasons		B1 for two out of three of: angles on a (straight) line add to $180°$; isosceles triangle (accept 2 sides equal or 2 angles equal); sum of angles in a triangle is equal to $180°$ **OR** B1 for two out of three of: angles on a (straight) line add to $180°$; isosceles triangle (accept 2 sides equal or 2 angles equal); exterior angle of a triangle is equal to the sum of the opposite interior angles

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Question	Working	Answer	Mark	Notes
13	$300 \div 6 = 50$ $300 \div 10 \times 3 = 90$ $300 - 50 - 90$ or $\frac{1}{6} + \frac{3}{10} = \frac{7}{15}$ $\frac{7}{15} \times 300 = 140$ $300 - 140$	160	4	M1 for $300 \div 6$ or 50 seen M1 for 300 ÷ 10 × 3 oe or $30 + 30 + 30$ or 90 seen M1 (dep on at least 1 previous M1) for 300 – "50" – "90" A1 cao or M1 for $\frac{1}{6} + \frac{3}{10}$ or $\frac{7}{15}$ oe M1 for "$\frac{7}{15}$" × 300 or 140 seen or 1 – "$\frac{7}{15}$" or $\frac{8}{15}$ o.e. seen M1 (dep on at least 1 previous M1) for 300 – '140' or 160 seen or "$\frac{8}{15}$"× 300 A1 cao

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Question	Working	Answer	Mark	Notes
14	$40 \div (2+3) = 8$ 8×2 8×3	16, 24	3	M1 for $40 \div (2+3)$ oe or 8 seen or $\frac{2}{5}$ seen or $\frac{3}{5}$ seen or listing at least 3 multiples of 2 and 3 M1 for '8' $\times 2$ or '8' $\times 3$ oe A1 for 16 and 24 in correct places SC : B2 for 24, 16 SC: If M0 scored, B1 for just one correct answer in the correct place
15 (a)		3, −3, −1	2	B2 for all 3 correct (B1 for 1 or 2 correct)
(b)		Graph	2	B2 for a fully correct graph or B1 ft for "7 points" plotted correctly ± 2 mm B1 for smooth curve drawn through their points provided B1 awarded in (a) Note: A straight line drawn from (−1, −3) to (0, −3) gets a maximum of B1
(c)		−2.3 and 1.3	1	B1 for −2.3 and 1.3 or ft ± 2 mm on a graph with exactly 2 points of intersection with the *x* axis

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Question	Working	Answer	Mark	Notes
16		Triangle at (1,–2), (–1, –2), (1, –5)	2	B2 for triangle at (1, –2), (–1, –2), (1, –5) (B1 for rotation of $180°$ about the wrong centre) or for a rotation of $90°$, centre (1,0) clockwise or anticlockwise.
17		Translation by $\begin{pmatrix} 3 \\ -2 \end{pmatrix}$	2	B1 for translation B1 (indep) for $\begin{pmatrix} 3 \\ -2 \end{pmatrix}$ or 3 to the right and 2 down oe Note: B0 if more than one transformation given.
18	$8x-12=5x+7$ $8x-5x=7+12$ $3x=19$	$\frac{19}{3}$ oe	3	M1 for 4 × 2x – 4 × 3 or $8x-12$ seen or an intent to divide by 4 throughout eg $\frac{5x+7}{4}$ oe seen M1 for correct method to isolate terms in x **and** isolate number terms on opposite sides of a 4 term equation eg '8x' – 5x = 7 + '12' or 3x = 19 A1 for $\frac{19}{3}$ oe (accept 6.33 or better)

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Mark Scheme (Results)

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GCSE Mathematics (2381)
Calculator Paper 12F

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Summer 2010

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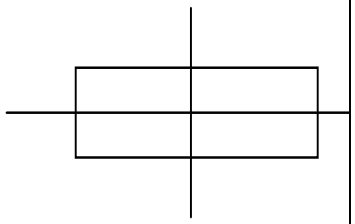
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5384F/12F				
Question	**Working**	**Answer**	**Marks**	**Notes**
1 (a)		A and D	1	B1 for both, either way around
(b)		B	1	B1 cao
2		Correct Reflection	1	B1 cao tol ± 1/2 sq
3	$6\times 2=12, 4\times 2=8$	12, 8	2	M1 any enlargement, or for 12 or 8 correctly inserted A1 both answers correctly inserted on the diagram SC B1 for 12 and 8 the wrong way round
4 (i)		cuboid	3	B1 accept rectangular prism
(ii)		sphere		B1 cao
(iii)		pyramid		B1 accept tetrahedron
5		53, 10	2	B1 for 53 cao B1 for 10 cao

Question	Working	Answer	Marks	Notes
6		Circle drawn with radius 5 cm±2 mm	1	B1 for correct circle with radius 5 cm ±2 mm (overlay)
7 (a)		75	1	B1 cao
(b)	$60 \div 10,\ 10/100 \times 60$ oe	6	2	M1 for $60 \div 10$ or $\frac{10}{100} \times 60$ or $60 \div 100 \times 10$ A1 cao
(c)	$40 \div 5 \times 3$	24	2	M1 for $40 \div 5$ or 40×3 or 40×0.6 oe or 8 or 120 seen A1 cao
8 (a)		–3	1	B1 for –3; accept 6 am
(b)		5	1	B1 for 5 or –5
(c)		–4	1	B1 cao

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Question	Working	Answer	Marks	Notes
9 (a)			2	B1 for each correct line of symmetry drawn within tolerance of overlay [−1 for each extra line drawn] [SC: B1 for both diagonals drawn in addition to the correct lines of symmetry]
(b)		5	1	B1 cao
(c)		3	1	B1 cao
10 (a)	$2000 \div 85 = 23.529...$	23	2	M1 for $2000 \div 85$ or $20 \div 0.85$ or sight of digits 235 A1 for 23 OR M1 for a build up method with an attempt to find the cost of at least 21 tulips. A1 for 23 SC B1 24 with or without working
(b)	$2000 - 85 \times 23$	45	2	M1 for 2000 − "23" × 85 or 20−"23"×0.85 or difference between £20 and "23"×85 p, consistent units A1 45 or £0.45, ft from "23" providing $20 \leq$ "23" < 24

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Question	Working	Answer	Marks	Notes
11 (a)		E	1	B1 for E (accept 07 45 or 09 59)
(b)	09 04 − 07 30 (or 30 + 60 + 4)	94	2	M1 for a clear method of finding the duration of the journey between 09 04 and 07 30 (eg 30 + 60 + 4) or 30 + 1 hr + 4) or sight of 174 or 1.74 or 1:74 or 1hr 74 or 134 or 1.34 or 1:34 or 1hr 34 or 9.04 – 7.30 A1 cao
(c)		C	1	B1 for C (accept 07 15 or 08 48)
12 (a)	$20 + 5\times6 =$	50	2	M1 for $20+5\times6$ or $20+30$ A1 cao SC: B1 for 150 seen
(b)	$65-20=45$ $45\div5=$	9	3	M1 for 65 – 20 or 45 seen M1 (dep) for "45" ÷ 5 A1 for 9 cao SC B2 for 3 as the final answer
13		Correct triangle	2	M1 for 5.5 line ±2mm or 45° angle drawn ±2° A1 triangle complete and drawn within tolerances given on overlay

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Question	Working	Answer	Marks	Notes
14 (a)	$8x = 17 + 3$	2.5	2	M1 $8x$=17+ 3 or $8x$ -3 + 3 = 17 + 3 or $\frac{8x}{8} - \frac{3}{8} = \frac{17}{8}$ or (17 + '3') ÷ 8 A1 for 2.5 or $\frac{20}{8}$ oe NB embedded answer of 2.5 must be clearly indicated in the equation and gets SC B1
(b)	$x = 9 \times 3 \div 2$	13.5	2	M1 for intent to multiply both sides by 3 or $\frac{3}{2}$ or divide both sides by 2, or $9 \div \left(\frac{2}{3}\right)$, or $9 \times \frac{3}{2}$ A1 for $\frac{27}{2}$ or 13.5 oe NB embedded answer of 13.5 must be clearly indicated in the equation and gets SC B1
15 (a)	$4 \div 12 =$	1 : 3	2	M1 for 4:12 or 2 : 6 seen A1 cao SC: B1 for 3:1 SC B1 for 1 to 3
(b)	$400 - (400 \times 0.15)$ or oe 400×0.85	340	2	M1 for 400×0.15 or 400×0.85 or 40+20 or 60 or $400 \times \frac{15}{100}$ or $400 \times \frac{85}{100}$ A1 cao

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Question	Working	Answer	Marks	Notes
16 (a)	1.25×620	775	2	M1 for 1.25×620 oe A1 cao
(b)	$50 \div 1.25 = 40$ $42 - 40$	2	3	M1 for $50 \div 1.25$ (= 40) oe M1 (dep) for 42 – "40" or "40" - 42 A1 cao OR M1 42x1.25 (= 52.5(0)) oe M1 (dep) "52.5(0)" – 50 or 50 – "52.5(0)" A1 cao Note 2.5(0) without working gets no marks SC B2 for -2 as the answer with no working.
17	$x = 1$ gives 11 $x = 2$ gives 28 $x = 1.5$, gives 18.(3..) $x = 1.6$, gives 20.(0..) $x = 1.7$, gives 21.(9..) $x = 1.8$, gives 23.(8..) $x = 1.9$, gives 25.(8..) $x = 1.85$ gives 24.8(31..) $x = 1.86$ gives 25.(03..) $x = 1.87$ gives 25.2(3..) $x = 1.88$ gives 25.4(4..) $x = 1.89$ gives 25.6(5..)	1.9	4	B2 for a trial between 1.8 and 1.9 inclusive evaluated (B1 for a trial between 1 and 2 inclusive) evaluated B1 for a different trial between $1.85 \leq x < 1.9$ evaluated B1 (dep on at least one previous B1) for 1.9 NB: No working scores ZERO marks even if answer is correct. Accept trial correct nearest whole number (rounded or truncated) if the value of x is to 1 d.p., but correct to 1 d.p. (rounded or truncated) if the value of x is to 2 d.p.

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Question	Working	Answer	Marks	Notes
18	$\pi \times 12$	37.7	2	M1 for $\pi \times 12$ or $3.1((4..) \times 12$ or $2\pi \times 6$ A1 for an answer in the range 37.6 to 37.8 or 12π on the answer line
19	$\sqrt{6^2 + 14^2} = \sqrt{232}$	15.23	3	M1 for $6^2 + 14^2$ or 36+196 or 232 M1 for $\sqrt{232}$ or $\sqrt{36+196}$ A1 for answer in the range 15.2 to 15.3

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Centre No.						Paper Reference								Surname	Initial(s)
Candidate No.						5	3	8	4	F	/	1	1	F	Signature

Paper Reference(s)

5384F/11F

Examiner's use only

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Edexcel GCSE

Mathematics (Modular) – 2381

Paper 11 (Non-Calculator)

Foundation Tier



Unit 3

Thursday 5 November 2009 – Morning

Time: 1 hour

Materials required for examination
Ruler graduated in centimetres and millimetres, protractor, compasses, pen, HB pencil, eraser.
Tracing paper may be used.

Items included with question papers
Nil

Instructions to Candidates

In the boxes above, write your centre number, candidate number, your surname, initials and signature.
Check that you have the correct question paper.
Answer ALL the questions. Write your answers in the spaces provided in this question paper.
You must NOT write on the formulae page.
Anything you write on the formulae page will gain NO credit.
If you need more space to complete your answer to any question, use additional answer sheets.

Information for Candidates

The marks for individual questions and the parts of questions are shown in round brackets: e.g. **(2)**.
There are 17 questions in this question paper. The total mark for this paper is 60.
There are 20 pages in this question paper. Any blank pages are indicated.
Calculators must not be used.

Advice to Candidates

Show all stages in any calculations.
Work steadily through the paper. Do not spend too long on one question.
If you cannot answer a question, leave it and attempt the next one.
Return at the end to those you have left out.

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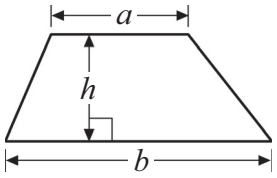
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GCSE Mathematics 2381

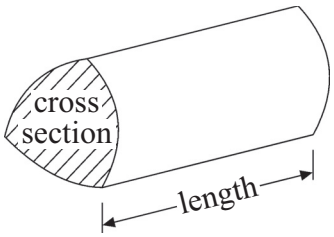
Formulae: Foundation Tier

You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.

Area of trapezium = $\frac{1}{2}(a+b)h$



Volume of prism = area of cross section × length



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N 3 5 5 2 2 A 0 2 2 0

Leave blank

Answer ALL SEVENTEEN questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

You must NOT use a calculator.

1. (a) Work out 480 – 263

.....

(2)

(b) Work out 6 × 0.3

.....

(1)

(c) Work out 5 – 1.4

.....

(1) **Q1**

(Total 4 marks)

Leave blank

2. The table shows the temperature in six cities at 11pm one day.

City	Temperature
Capetown	11 °C
Dublin	3 °C
London	–2 °C
Moscow	–6 °C
Paris	0 °C
Sydney	14 °C

(a) Write down the name of the city with

(i) the highest temperature,

.....

(ii) the lowest temperature.

.....

(2)

(b) Work out the difference between the temperature in Dublin and the temperature in London.

..... °C

(1)

Q2

(Total 3 marks)

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Leave blank

3. 27 people were on a coach.



18 people got off the coach.
15 people got on the coach.

(a) How many people are there now on the coach?

.....
(2)

There were 24 people at the next coach stop.

$\frac{1}{3}$ of these people got on the coach.

(b) What is $\frac{1}{3}$ of 24?

.....
(2)

Q3

(Total 4 marks)

4. (a) Measure the length of the line AB.
Give your answer in centimetres.



..... cm
(1)

(b) Mark with a cross (×) the point on the line AB that is 3 cm from A.

(1)

Q4

(Total 2 marks)

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Leave blank

5. $r = 9$, $s = 4$

Find the value of

(i) $r - s$

.....

(ii) $10r$

.....

Q5

(Total 2 marks)

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Leave blank

6. A shop sells ink cartridges.

Ink Cartridge	Cost
Black	£6 each
Colour	£8.50 each

Liz buys 6 colour ink cartridges.

(a) Work out her total cost.

£ .....

(2)

Callum has £50 to spend on ink cartridges.

(b) Work out the greatest number of black ink cartridges he can buy.

.....

(2)

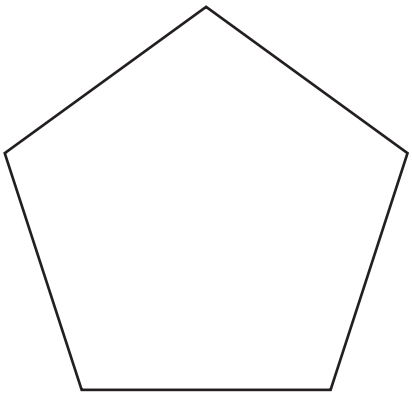
Q6

(Total 4 marks)

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Leave blank

7. Here is a regular pentagon.



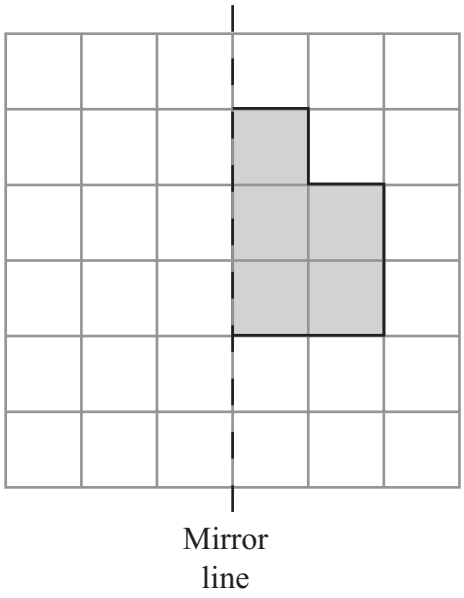
(a) What is the order of rotational symmetry of this pentagon?

.....

(1)

(b) Draw a line of symmetry on this pentagon.

(1)



(c) Reflect the shaded shape in the mirror line.

(1) **Q7**

(Total 3 marks)

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N 3 5 5 2 2 A 0 8 2 0

Leave blank

8. A school shop sells four flavours of crisps.

Sandra kept a record of the sales of crisps in one week.
The table gives some information about the sales.

Flavour	**Percentage sales**
Plain	25%
Salt & Vinegar	40%
Cheese & Onion	20%
Beef	

(a) Complete the table.

(1)

(b) Which flavour of crisp had the highest percentage sales?

.....

(1)

(c) Write 25% as a fraction in its simplest form.

.....

(2)

The school shop sold 200 packets of crisps that week.

(d) How many packets of Cheese & Onion crisps were sold during that week?

.....

(2)

Q8

(Total 6 marks)

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Leave blank

9. Here is a sketch of a right-angled triangle.

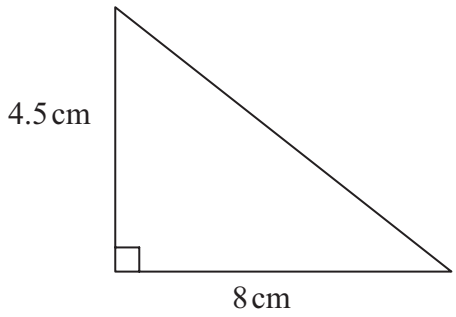


Diagram **NOT** accurately drawn

In the space below, make an accurate drawing of this triangle.

Q9

(Total 3 marks)

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Leave blank

10. Shams uses this rule to work out the total charge for photocopying.

Total charge = number of photocopies × copy rate

Shams needs 15 photocopies in colour.
The copy rate for photocopies in colour is 6 pence.

(a) Use the rule to work out the total charge.

..... p
(2)

Shams also needs 25 photocopies in black and white.
The total charge is 75 pence.

(b) Use the rule to work out the copy rate for photocopies in black and white.

..... p
(2)

Q10

(Total 4 marks)

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11.

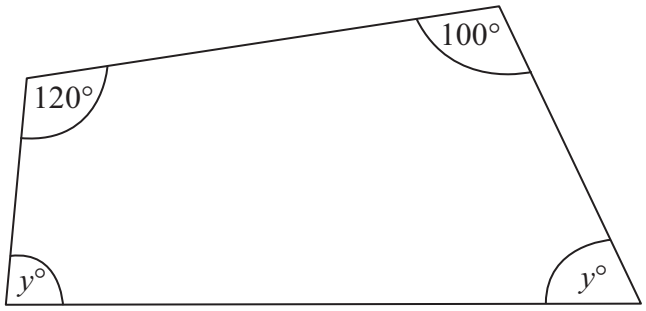


Diagram **NOT** accurately drawn

Work out the value of y.

y = ...

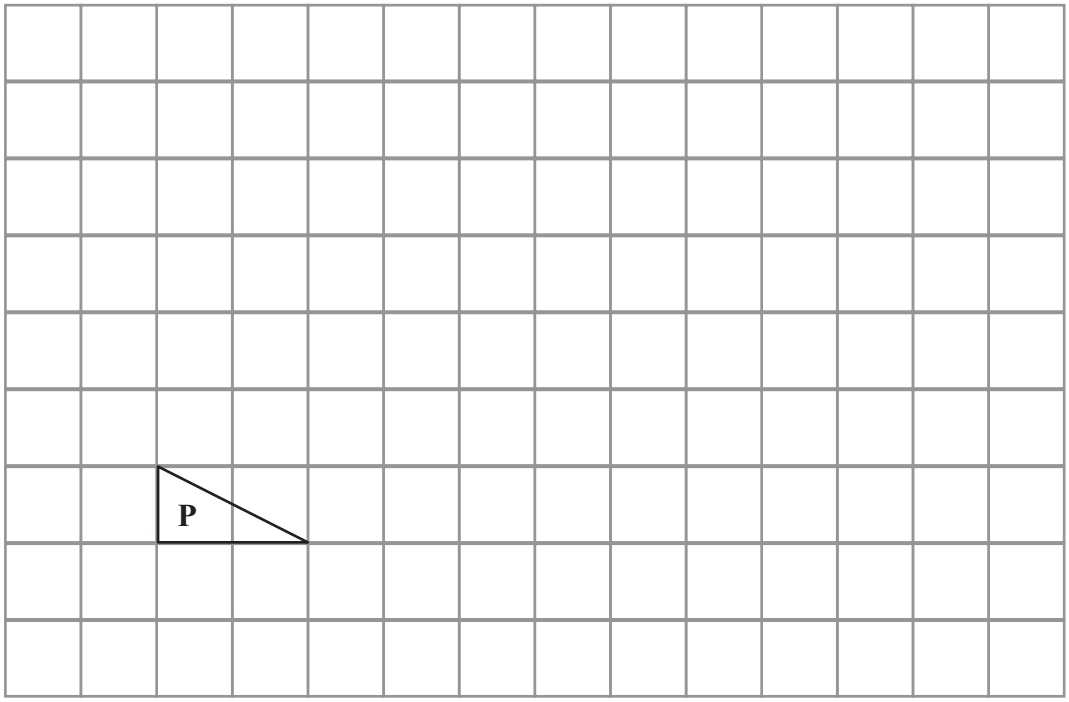
(Total 3 marks)

Q11

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Leave blank

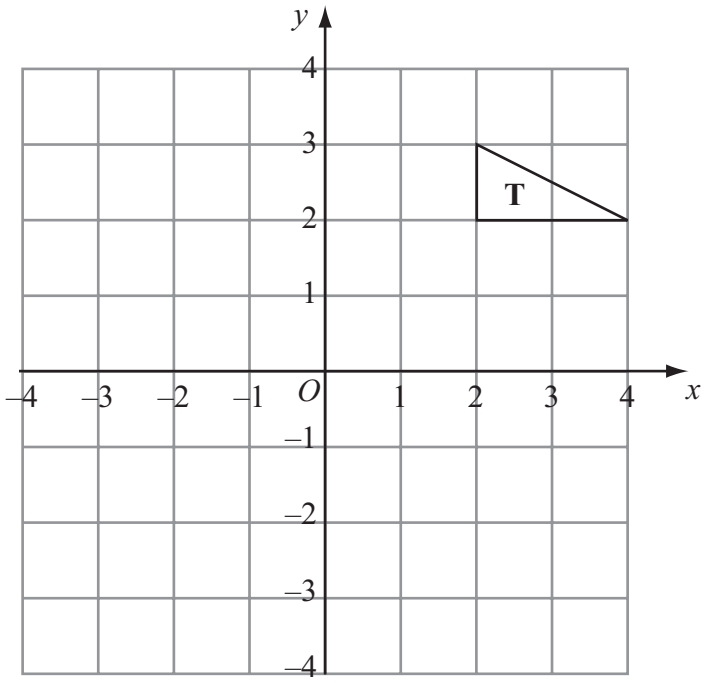
12.



Triangle **P** has been drawn on a grid.

(a) On the grid, draw an enlargement of the triangle **P** with scale factor 3

(2)



Triangle **T** has been drawn on a grid.

(b) On the grid, reflect triangle **T** in the *y*-axis.

(2)

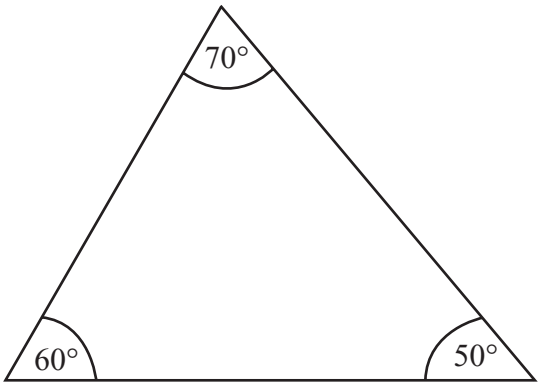
Q12

(Total 4 marks)

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Leave blank

13. (a) Here is a triangle.



This triangle is to be enlarged by a scale factor of 2

Emily says the angles will be doubled.

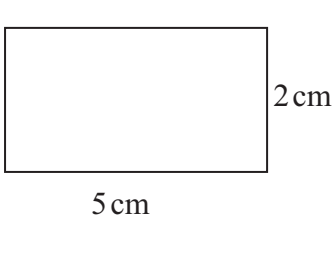
Emily is **wrong**.
Explain why.

.....

.....

(1)

(b) Here are two rectangles.



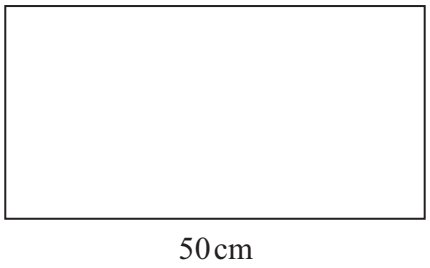


Diagram **NOT** accurately drawn

Ross says that the larger rectangle is an enlargement of the smaller rectangle.

Ross is **correct**.
Explain why.

.....

.....

(2)

Q13

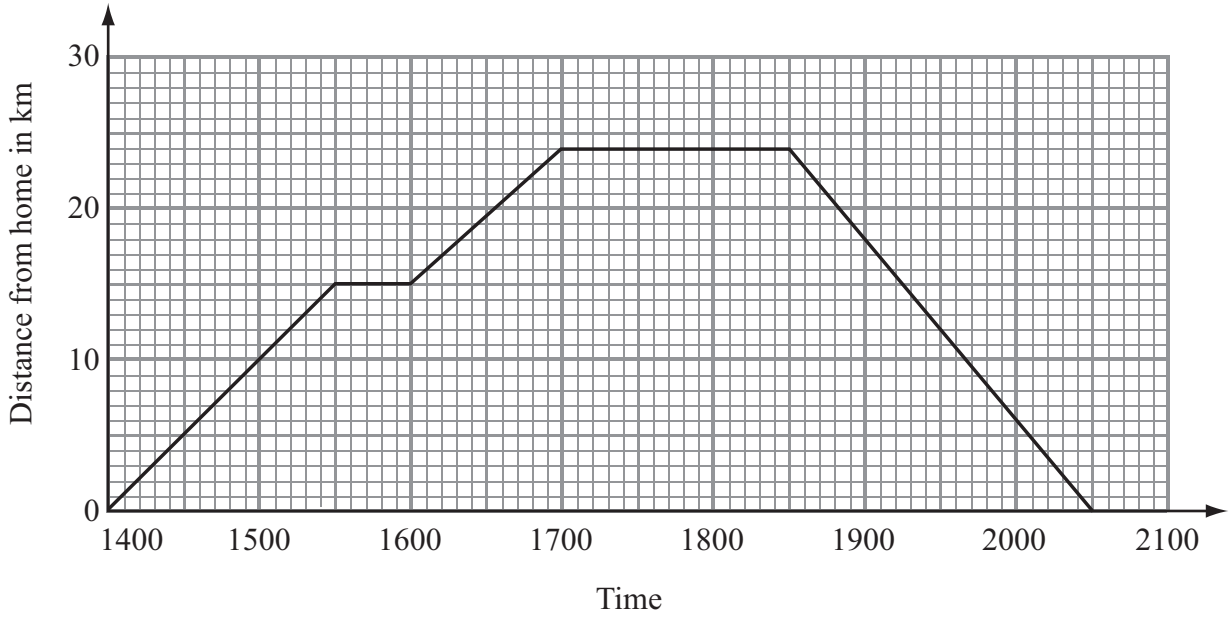
(Total 3 marks)

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Leave blank

14. Jenny cycled from home to visit her uncle.
She also cycled back home.

The travel graph shows her journey.



She had a rest on the way to her uncle's house.

(a) How far did Jenny cycle before she had a rest?

..... km
(1)

(b) At what time did Jenny arrive at her uncle's house?

.....
(1)

(c) For how many hours was Jenny away from home?

..... hours
(2)

(d) Work out Jenny's average speed for her journey from her uncle's house back to her home.
Give your answer in kilometres per hour.

..... kilometres per hour
(2)

Q14

(Total 6 marks)

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Leave blank

15. Here is a list of the ingredients needed to make 12 muffins.

Ingredients for 12 muffins

210 g self-raising flour
150 g sugar
250 m*l* milk
60 g butter
$\frac{1}{4}$ teaspoon vanilla essence

(a) Work out how much butter is needed to make 36 muffins.

..... g
(2)

(b) Work out how much milk is needed to make 6 muffins.

..... m*l*
(2)

Q15

(Total 4 marks)

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Leave blank

16. k is an integer such that $-1 \leqslant k < 3$

List all the possible values of k.

.....

Q16

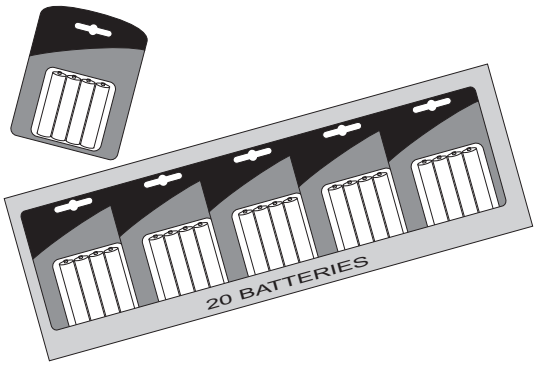
(Total 2 marks)

17. Batteries are sold in packets and boxes.

Each packet contains 4 batteries.
Each box contains 20 batteries.

Bill buys p packets of batteries
and b boxes of batteries.
Bill buys a total of N batteries.

Write down a formula for N in
terms of p and b.



.....

Q17

(Total 3 marks)

TOTAL FOR PAPER: 60 MARKS

END

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Candidate No.						5	3	8	4	F	/	1	2	F	Signature

Paper Reference(s)

5384F/12F

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Edexcel GCSE

Mathematics (Modular) – 2381

Paper 12 (Calculator)

Foundation Tier



Unit 3

Tuesday 10 November 2009 – Morning

Time: 1 hour

Materials required for examination
Ruler graduated in centimetres and millimetres, protractor, compasses, pen, HB pencil, eraser, calculator. Tracing paper may be used.

Items included with question papers
Nil

Instructions to Candidates

In the boxes above, write your centre number, candidate number, your surname, initials and signature.
Check that you have the correct question paper.
Answer ALL the questions. Write your answers in the spaces provided in this question paper.
You must NOT write on the formulae page.
Anything you write on the formulae page will gain NO credit.
If you need more space to complete your answer to any question, use additional answer sheets.

Information for Candidates

The marks for individual questions and the parts of questions are shown in round brackets: e.g. **(2)**.
There are 20 questions in this question paper. The total mark for this paper is 60.
There are 16 pages in this question paper. Any blank pages are indicated.
Calculators may be used.
If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.

Advice to Candidates

Show all stages in any calculations.
Work steadily through the paper. Do not spend too long on one question.
If you cannot answer a question, leave it and attempt the next one.
Return at the end to those you have left out.

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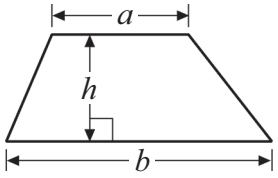
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GCSE Mathematics 2381

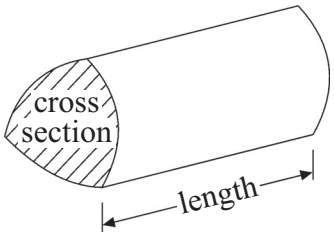
Formulae: Foundation Tier

You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.

Area of trapezium = $\frac{1}{2}(a+b)h$



Volume of prism = area of cross section × length



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N 3 5 5 2 3 A 0 2 1 6

Leave blank

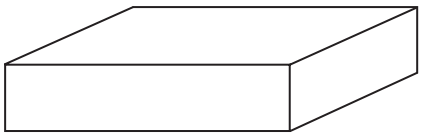
Answer ALL TWENTY questions.

Write your answers in the spaces provided.

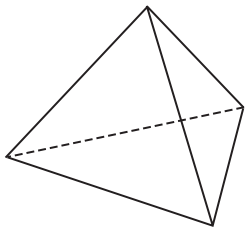
You must write down all stages in your working.

1. (a) Write down the name of each of these two 3-D shapes.

(i)



(ii)



(i) ..... (ii) .....

(2)

(b) In the space below, sketch a cone.

(1)

Q1

(Total 3 marks)

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Leave blank

2. Pencils cost 35p each.
Simon has £5 to spend.

Work out the greatest number of these pencils he can buy.

.....

Q2

(Total 2 marks)

3. In the space below, draw accurately a circle with radius 5 cm.
Use the point marked with a cross (×) as the centre of your circle.

×

Q3

(Total 1 mark)

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Leave blank

4. Here is part of a bus timetable.

Bourne	07 40	08 00	08 30	09 00
Baston	07 52	08 12	08 42	09 12
Market Deeping	08 00	08 20	09 00	09 20
Northborough	08 04	08 24	09 04	09 24
Glinton	08 08	08 28	09 08	09 28
Peterborough	08 22	08 42	09 20	09 40

A bus leaves Bourne at 08 00

(a) At what time should this bus get to Peterborough?

.....

(1)

Vanessa catches a bus in Baston.
She has to go to Glinton.
She needs to arrive in Glinton **before** 08 45

(b) Write down the time of the latest bus she can catch from Baston.

.....

(1)

The 09 00 bus from Bourne takes less time to get to Peterborough than the 08 30 bus from Bourne.

(c) Work out how many minutes less.

..... minutes

(2)

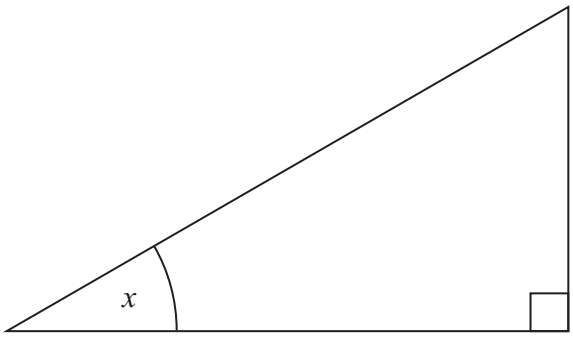
Q4

(Total 4 marks)

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Leave blank

5. Here is a triangle.



(a) What type of triangle is it?

.....

(1)

(b) Measure the size of the angle marked x.

.....°

(1)

Q5

(Total 2 marks)

6. Rizwan drives a van.
He is paid 37p for each mile he drives.

One day Rizwan writes down the distance readings from his van.

Start of day:	5	6	0	4	miles
End of day:	5	7	6	0	miles

Work out how much Rizwan is paid for this day's driving.

£ .....

Q6

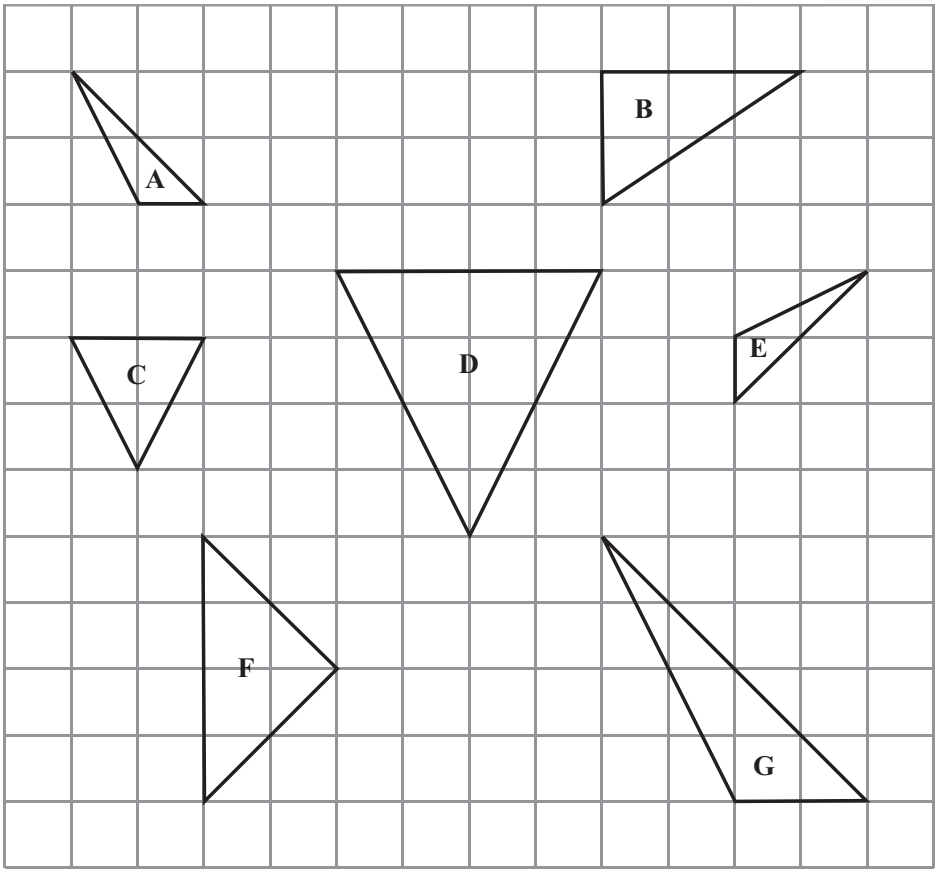
(Total 4 marks)

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N 3 5 5 2 3 A 0 6 1 6

Leave blank

7. Here are 7 triangles drawn on a grid.



(a) Write down the letter of a right-angled triangle.

.....

(1)

Dale says, "Triangle **C** is congruent to triangle **D**".
Dale is **wrong**.

(b) Explain why.

.....

(1)

(c) Write down the letters of the two triangles which are congruent.

..... and .....

(1)

Triangle **G** is an enlargement of triangle **A**.

(d) Write down the scale factor of this enlargement.

.....

(1)

Q7

(Total 4 marks)

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Leave blank

8. $P = t + 5$

(a) Work out the value of P when $t = 2$

.....

(1)

$Q = 4w - 2$

(b) Work out the value of Q when $w = 3$

.....

(2)

Q8

(Total 3 marks)

9. Matthew thinks of a number.

He multiplies the number by 4
He then subtracts 3

His answer is 37

What number did Matthew first think of?

Q9

.....

(Total 2 marks)

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N 3 5 5 2 3 A 0 8 1 6

Leave blank

10. Work out $\frac{2}{5}$ of 80

.....

Q10

(Total 2 marks)

11.

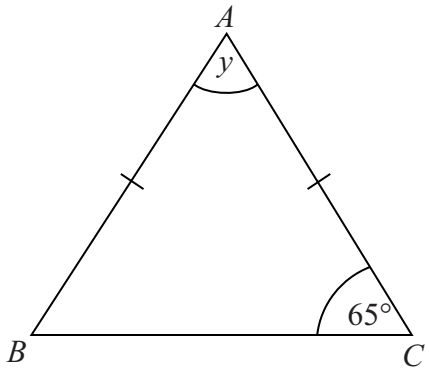


Diagram **NOT** accurately drawn

ABC is a triangle.
AB = *AC*.

(i) Work out the size of the angle marked *y*.

..... °

(ii) Give reasons for your answer.

.....

.....

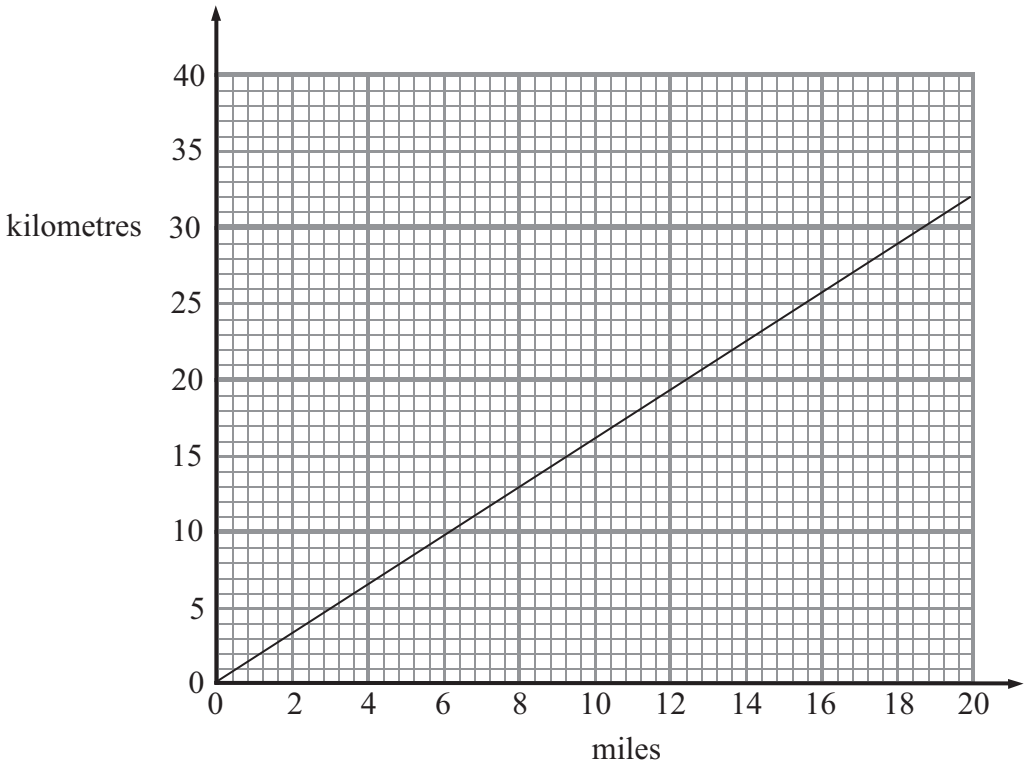
Q11

(Total 3 marks)

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12. The graph can be used for changing between miles and kilometres.



(a) Use the graph to change 12 miles to kilometres.

..... kilometres
(1)

(b) Use the graph to change 10 kilometres to miles.

..... miles
(1)

Q12

(Total 2 marks)

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Leave blank

13.

Prices	
Apples	£2.00 per kg
Oranges	£0.34 each
Tomatoes	£2.40 per kg

Emma buys

1 kg of apples

2 oranges

$\frac{3}{4}$ kg tomatoes

Work out the total cost.

£ .....

Q13

(Total 4 marks)

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Leave blank

14. Colin goes to Switzerland.
The exchange rate is £1 = 2.30 francs.

He changes £400 into francs.

(a) How many francs should he get?

..... francs
(2)

In Switzerland, Colin buys a hat.
The cost of the hat is 46 francs.

(b) Work out the cost of the hat in pounds.

£ .....
(2)

Q14

(Total 4 marks)

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Leave blank

15. (a) Solve $m + 5 = 12$

$m =$ .....

(1)

(b) Solve $3n = 36$

$n =$ .....

(1)

(c) Solve $\frac{x}{5} = 10$

$x =$ .....

(1)

(d) Solve $4y + 7 = 13$

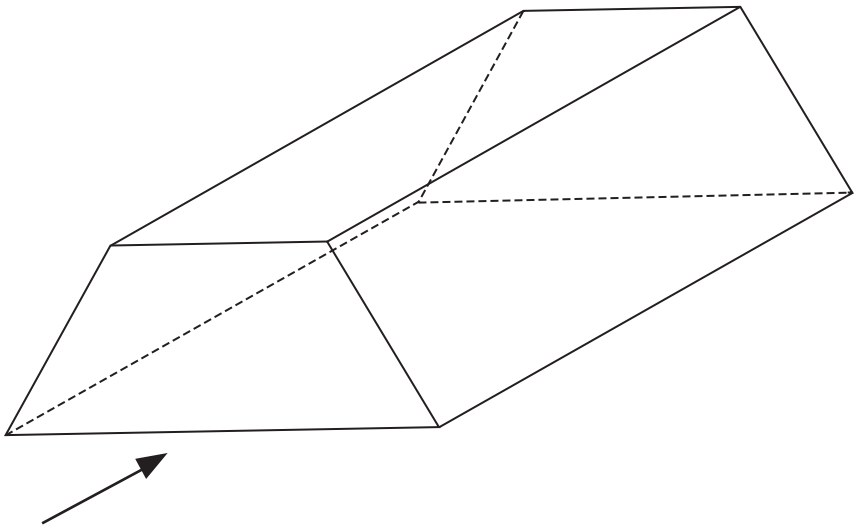
$y =$ .....

(2)

Q15

(Total 5 marks)

16.



The diagram shows a prism.

In the space below, sketch the front elevation from the direction marked with an arrow.

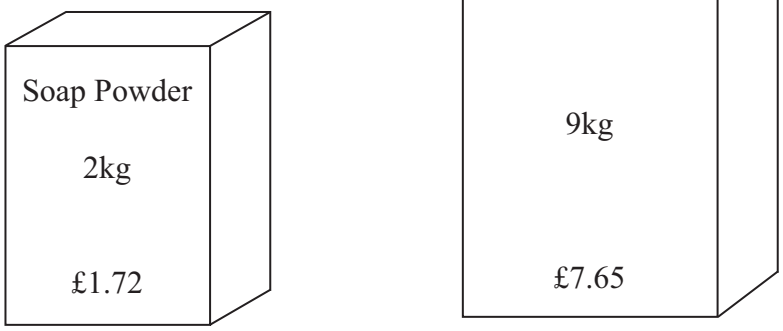
Q16

(Total 2 marks)

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Leave blank

17. Soap powder is sold in two sizes of box.



Small box Large box

A small box contains 2 kg of soap powder and costs £1.72
A large box contains 9 kg of soap powder and costs £7.65

Which size of box gives the better value for money?

.....

Explain your answer.
You must show all your working.

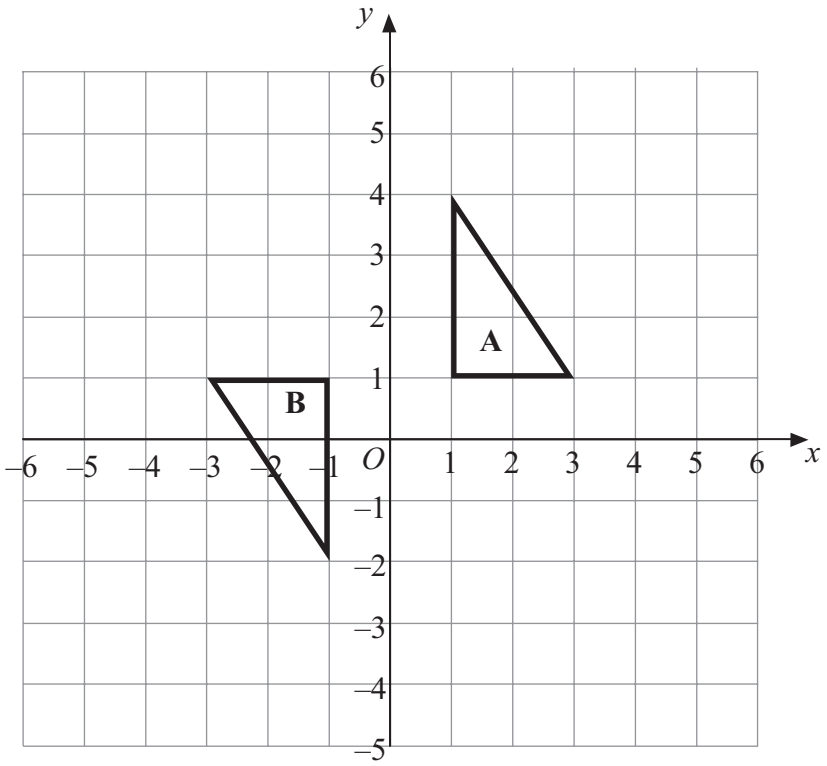
Q17

(Total 3 marks)

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Leave blank

18.



Describe fully the single transformation that maps triangle **A** onto triangle **B**.

.....

.....

Q18

(Total 3 marks)

19. A piece of wood is 180 cm long.
Tom cuts it into three pieces in the ratio 2 : 3 : 4

Work out the length of the longest piece.

..... cm

Q19

(Total 3 marks)

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Leave blank

20. The equation

$$x^3 + 2x = 60$$

has a solution between 3 and 4

Use a trial and improvement method to find this solution.
Give your answer correct to 1 decimal place.
You must show all your working.

$x =$ .....

Q20

(Total 4 marks)

TOTAL FOR PAPER: 60 MARKS

END

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Mark Scheme (Results)

November 2009

GCSE

GCSE Mathematics (Modular) - 2381
Paper: 5384F/11F

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5384F_11F
0911

5384F/11F					
Question		**Working**	**Answer**	**Mark**	**Notes**
1	(a)	7 4~~8~~^{1}0 263 217	217	2	M1 for decomposition or adding on or sight of 7 after subtraction A1 cao
	(b)		1.8		B1 cao
	(c)		3.6		B1 cao
2	(a)(i)		Sydney	2	B1 for Sydney
	(ii)		Moscow		B1 for Moscow
	(b)	3 – – 2	5	1	B1 (accept –5)
3	(a)	27 – 18 + 15 =	24	2	M1 27 – 18 + 15 A1 cao
	(b)	24 ÷ 3 or 24 –3 –3 –3 –3…	8	2	M1 24÷3 or complete method for dividing 24 by 3 A1 cao
4	(a)		6.8–7.2	1	B1 6.8–7.2
	(b)		Cross	1	B1 Cross within overlay (2.8–3.2 cm from A)
5	(i)	9 – 4	5	1	B1 cao
	(ii)	10 x 9	90	1	B1 cao
6	(a)	6 x 8.50	51	2	M1 6 x 8.5(0) A1 cao
	(b)	50 ÷ 6	8	2	M1 50 ÷ 6 or 8.3…or repeated addition up to 8x6 or 9x6 oe A1 cao

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5384F/11F					
Question		**Working**	**Answer**	**Mark**	**Notes**
7	(a)		5	1	B1 cao
	(b)		line	1	B1
	(c)		Reflection	1	B1 Correct reflection. Allow vertices slightly misplaced (no more than ¼ side square length)
8	(a)	100–(25+40+20)	15%		B1 15 or 15%
	(b)		Salt &Vinegar		B1 Accept S&V, 2nd, 40%, second OR ft from table
	(c)	$\frac{25}{100} = \frac{1}{4}$	$\frac{1}{4}$	2	B2 for $\frac{1}{4}$ (B1 for any equivalent fraction to $\frac{1}{4}$, 0.25, $\frac{25}{100}$)
	(d)	$200 \times \frac{20}{100}$ oe, eg 200 × 20 ÷ 100, 200÷5	40	2	M1 for $200 \times \frac{20}{100}$ oe A1 cao SC: 40% gets M1 A0
9			Triangle	3	B3 Fully correct: One angle and both sides, and drawn as a triangle. (B2 Two of 90°, 8 cm, 4.5 cm) (B1 One angle or one side) Tolerances: Angle of 90±2°, side of 4.5 cm drawn as 4.3–4.7 cm, side of 8cm drawn as 7.8–8.2 cm.

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5384F/11F					
Question		**Working**	**Answer**	**Mark**	**Notes**
10	(a)	15 × 6 =	90p	2	M1 15×6 or repeated addition of six 15s or fifteen 6s A1 cao
	(b)	75 ÷ 25 =	3p	2	M1 75÷25 or adds up three 25s or subtracts three 25s from 75 A1 cao
11		360 – (100 + 120) 140 ÷ 2	70	3	M1 for 360 – (100 + 120) or 140 seen M1 (dep) for "140" ÷ 2 A1 cao
12	(a)		Enlarged T	2	B2 any correct enlargement (B1 at least one side drawn to a sf of 3 OR a correct enlargement for a a scale factor ≠ 3 or 1)
	(b)	Triangle at (-4,2),(-2,2),(-2,3)	Reflected P		M1 reflection in any line parallel to *y* axis, or correct reflection in *x* axis. A1 cao
13	(a)		Reason		B1 for "angles stay the same" or "angles will be 60°, 70°, 50°" oe (B0 for "not doubled" oe)
	(b)		Reason		M1 for attempt to find scale factor or sight of 10 (unless not relevant) or recognition that same sf has been used. A1 for reason that uses both dimensions of the rectangle or states that a sf of 10 has been used for both dimensions. (accept "5x10=50, 2x10=20" oe for M1A1)
14	(a)		15km	1	B1 cao
	(b)		1700	1	B1 for 1700 or 5pm
	(c)		6½	2	B2 for 6½ hours oe (B1for sight of 2030 – 1400)
	(d)		12	2	M1 for 24 ÷ 2 A1 cao

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Question		**Working**	**Answer**	**Mark**	**Notes**
15	(a)	60 x 35	180	2	M1 for 60 x 3 oe A1 cao
	(b)	250 ÷ 2	125	2	M1 for 250 ÷ 2 oe A1 cao
16			-1, 0, 1, 2	2	B2 cao B1 for one error or omission.
17			$N=4p+20b$	3	B3 for $N=4p+20b$ or $N=4\times p+20\times b$ or N=p4+b20 oe (B2 for correct RHS or $N=k+20b$ oe $k\neq 4p$ or $N=4p+k$ oe $k\neq 20b$ where k is algebraic or numerical, $k\neq 0$) (B1 for $N=ap+bq$; $a\neq 0$ or 4, $b\neq 0$ or 20; OR $4p+k$ oe $k\neq 20b$ where k is algebraic or numerical, $k\neq 0$) NB: N=something non-linear scores no marks. SC: award B1 for $N=p\times 4$ <space> $b\times 20$, or $N=4p\times 20b$

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0911

5384F/12F					
Question		**Working**	**Answer**	**Mark**	**Notes**
1	(a)(i)		Cuboid	1	B1 for cuboid or rectangular prism; ignore spelling
	(ii)		Triangular-based pyramid	1	B1 ignore spelling, accept pyramid, tetrahedron
	(b)			1	B1 for sketch of cone, accept   gets B0
2			14	2	M1 for 500 ÷ 35 or 14.2(...) seen or for addition/subtraction method: 14 or 15 lots of 35 listed. A1 cao
3			Circle of radius 5 cm	1	B1 for circle within overlay (radius 5 cm ± 2mm)
4	(a)		0842	1	B1 (accept 8 42 or 8 42 am)
	(b)		08 12	1	B1 (accept 8 12 or 8 12 am)
	(c)		10	2	M1 for (09 20 - 08 30) – (09 40 - 09 00) or 30 – 20 or for 50 or 40 seen A1 cao
5	(a)		Right-angled	1	B1 accept scalene
	(b)		28-32	1	B1 for 30 ± 2, that is any number in the range 28-32 inclusive

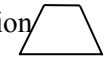
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Question		**Working**	**Answer**	**Mark**	**Notes**
6		35760 – 35604 = 156 37 × 156 = 5772 OR 5760×37=213120 5604×37=207348 213120-207348=5772	57.72	4	M1 for differencing using figures derived from the table or sight of 156 M1 for ×37 or ×0.37 or sight of digits 213120, 207348 M1 for conversion to £ (eg use of 0.37 or conversion of "5772" to "57.72" A1 cao SC: B2 for sight of the digits 5772
7	(a)		B or F	1	B1 for at least one of B or F (no extras)
	(b)		Not the same	1	B1 for reason, e.g. 'different lengths', 'D is an enlargement of C', 'they are similar', 'they are not the same size' Any contradiction in the answer award 0 marks.
	(c)		A and E	1	B1 cao
	(d)		2	1	B1 cao
8	(a)		7	1	B1 cao
	(b)		10	2	M1 for 4 × 3 or 12 seen A1 cao
9		37 + 3 = 40 40 ÷ 4 = 10	10	2	M1 for +3 or 40 seen or $4x - 3$ A1 cao
10		80 ÷ 5 × 2	32	2	M1 for 80 ÷ 5 or 80 × 2 or sight of 16 or 160 A1 cao

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Question		**Working**	**Answer**	**Mark**	**Notes**
11	(i)		50	3	M1 for 180 – (65 + 65) oe A1 cao
	(ii)		reason		B1 for isosceles (or two equal (or base) angles because two sides are the same) or angles in a triangle add to 180 Do not accept reasoning that is describing a method of solution.
12	(a)		19 – 19.9	1	B1 for answer in the range 19 to 19.9 inclusive
	(b)		6 – 6.4	1	B1 for answer in the range 6 to 6.4 inclusive
13		2.40 ÷ 4 × 3 (= 1.80) 2 + 2 × 0.34 + 1.80	4.48	4	M1 for 2 × 0.34 or 0.34+0.34 or 0.68 seen M1 for 2.40 ÷ 4 × 3 oe or 1.20+0.60 or 2.40-0.60 or 1.8(0) seen M1 (dep on at least one previous M1) for 2+"0.68"+"1.8(0)" A1 for 4.48 or 448p Accept equivalent methods in pence.
14	(a)	400 × 2.30	920	2	M1 for 400 × 2.30 oe A1 for 920 or 920.00
	(b)	46 ÷ 2.30	20	2	M1 for 46 ÷ 2.30 oe A1 for 20 or 20.00
15	(a)		7	1	B1 cao
	(b)		12	1	B1 cao
	(c)		50	1	B1 cao
	(d)	$4y + 7 - 7 = 13 - 7$ $4y = 6$	1.5	2	M1 for subtracting 7 from both sides or dividing all 3 terms by 4 A1 for 1.5 oe

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Question		**Working**	**Answer**	**Mark**	**Notes**
16			Correct elevation 	2	B2 for sketch of trapezium (B1 for trapezium with a rectangle or a parallelogram added at top or a side or lines drawn from vertices.)
17		1.72 ÷ 2 (= 0.86) 7.65 ÷ 9 (= 0.85)	Large box with reasons 9 kg	3	M1 for 1.72 ÷ 2 (= 0.86) M1 for 7.65 ÷ 9 (= 0.85) A1 for large box or 9 kg with correct calculations OR M1 for 2 ÷ 1.72 (= 1.162…) M1 for 9 ÷ 7.65 (= 1.176…) A1 for large box or 9 kg with correct calculations OR M2 for 7.65 × 2 ÷ 9 (=1.70) or for 1.72 ÷ 2 × 9 (=7.74) A1 for large box or 9 kg with correct calculations OR M1 for 1.72 × 9 (= 15.48) M1 for 7.65 × 2 (=15.30) A1 for large box or 9 kg with correct calculations Accept equivalent methods for comparison.
18			Rotation 180° Centre (0, 1)	3	B1 for rotation B1 for 180 or ½ turn B1 for (0, 1) OR B1 enlargement, B1 sf -1, B1 (0,1) (B0 for any combination of transformations)
19		180 ÷ 9 (=20) 20 × 4	80	3	M2 for 180 ÷ (2+3+4) × 4 OR for 40, 60, 80 seen. (M1 for 180÷(2+3+4) OR 20 seen. A1 cao

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Question		**Working**	**Answer**	**Mark**	**Notes**
20		3→ 33 4 → 72 3.1 → 35.9(91) 3.2 → 39.1(68) 3.3 → 42.5(37) 3.4 → 46.1(04) 3.5 → 49.8(75) 3.6 → 53.8(56) 3.7 → 58.0(53) 3.8 → 62.4(72) 3.9 → 67.1(19) 3.75 → 60.2(34375)	3.7	4	B2 for a trial between 3.7 and 3.8 inclusive (B1 for a trial between 3 and 4 inclusive) B1 for a different trial between 3.7 and 3.8 exclusive B1 (dep on at least one previous B1) for 3.7 NB trials should be evaluated to at least 1dp truncated or rounded

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Centre No.						Paper Reference								Surname	Initial(s)
Candidate No.						5	3	8	4	F	/	1	1	F	Signature

Paper Reference(s)

5384F/11F

Examiner's use only

Team Leader's use only

Edexcel GCSE

Mathematics (Modular) – 2381

Paper 11 (Non-Calculator)

Foundation Tier



Unit 3

Monday 18 May 2009 – Afternoon

Time: 1 hour

Materials required for examination
Ruler graduated in centimetres and millimetres, protractor, compasses, pen, HB pencil, eraser.
Tracing paper may be used.

Items included with question papers
Nil

Instructions to Candidates

In the boxes above, write your centre number, candidate number, your surname, initials and signature.
Check that you have the correct question paper.
Answer ALL the questions. Write your answers in the spaces provided in this question paper.
You must NOT write on the formulae page.
Anything you write on the formulae page will gain NO credit.
If you need more space to complete your answer to any question, use additional answer sheets.

Information for Candidates

The marks for individual questions and the parts of questions are shown in round brackets: e.g. **(2)**.
There are 20 questions in this question paper. The total mark for this paper is 60.
There are 16 pages in this question paper. Any blank pages are indicated.
Calculators must not be used.

Advice to Candidates

Show all stages in any calculations.
Work steadily through the paper. Do not spend too long on one question.
If you cannot answer a question, leave it and attempt the next one.
Return at the end to those you have left out.

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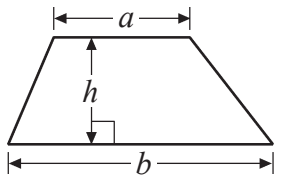
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GCSE Mathematics

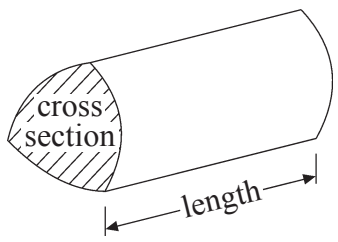
Formulae: Foundation Tier

You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.

Area of trapezium = $\frac{1}{2}(a + b)h$



Volume of prism = area of cross section × length



N 3 4 8 0 8 A 0 2 1 6

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Leave blank

Answer ALL TWENTY questions.

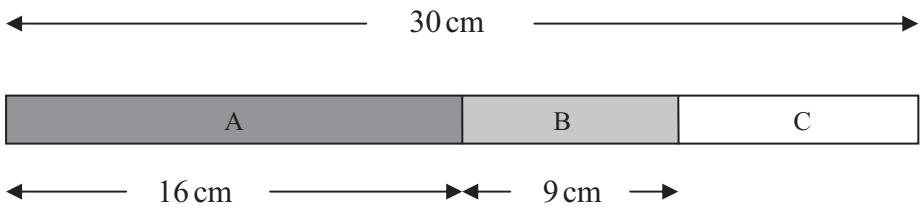
Write your answers in the spaces provided.

You must write down all stages in your working.

You must NOT use a calculator.

1.

Diagram **NOT** accurately drawn



Here is a picture of a stick.
The stick is in three parts, A, B and C.

The total length of the stick is 30 cm.
The length of part A is 16 cm.
The length of part B is 9 cm.

Work out the length of part C.

..... cm

(Total 2 marks)

Q1

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Leave blank

2. (a) Work out 400 – 193

.....
(2)

(b) Work out 4 – 9

.....
(1)

(c) Work out -3×5

.....
(1)

(d) Work out 300 ÷ 50

.....
(1)

Q2

(Total 5 marks)

3. (a) Work out 50% of £60

£ .....
(1)

(b) Work out 25% of 20 metres.

..... metres
(1)

Q3

(Total 2 marks)

N 3 4 8 0 8 A 0 4 1 6

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Leave blank

4. Here is a table for a two-stage number machine.
The machine multiplies by 2 and then subtracts 3

Complete the table.

Input → **× 2** → **–3** → **Output**

Input	Output
2	1
4	5
10	.....
.....	27

Q4

(Total 3 marks)

5. Here are five shapes.



A **B** **C** **D** **E**

Write down the letter of a shape that has

(i) **no** lines of symmetry,

.....

(ii) exactly **one** line of symmetry,

.....

(iii) exactly **two** lines of symmetry,

.....

(iv) rotational symmetry of order two.

.....

Q5

(Total 4 marks)

N 3 4 8 0 8 A 0 5 1 6

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Leave blank

6. The table shows temperatures at midnight and midday on one day in five cities.

City	Midnight temperature	Midday temperature
Belfast	−3 °C	4 °C
Cambridge	−1 °C	4 °C
Edinburgh	−7 °C	−1 °C
Leeds	−6 °C	3 °C
London	−2 °C	6 °C

(a) Which city had the lowest midnight temperature?

.....

(1)

(b) How many degrees higher was the midnight temperature in Cambridge than the midnight temperature in Leeds?

..... °C

(1)

(c) Which city had the greatest rise in temperature from midnight to midday?

.....

(1)

Q6

(Total 3 marks)

7. (a) Solve $x + 4 = 10$

$x =$ .....

(1)

(b) Solve $4y = 20$

$y =$ .....

(1)

(c) Solve $19 - m = 12$

$m =$ .....

(1)

Q7

(Total 3 marks)

N 3 4 8 0 8 A 0 6 1 6

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Leave blank

8. The table shows part of a bus timetable from Shotton to Alton.

Shotton	07 30	08 00	09 00	10 00	11 00
Crook	07 45	08 15	09 15	10 15	11 15
Prudhoe	07 58	08 28	09 28	10 28	11 28
Hexham	08 15	08 45	09 45	10 45	11 45
Alton	08 30	09 00	10 00	11 00	12 00

A bus leaves Shotton at 07 30

(a) What time should it arrive at Alton?

.....

(1)

Another bus leaves Prudhoe at 08 28

(b) How many minutes should it take to get to Hexham?

..... minutes

(1)

Serena lives in Crook.
She has to be in Hexham by quarter past 11

(c) What is the time of the latest bus she can catch from Crook to arrive in Hexham by quarter past 11?

.....

(1)

Q8

(Total 3 marks)

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Leave blank

9.

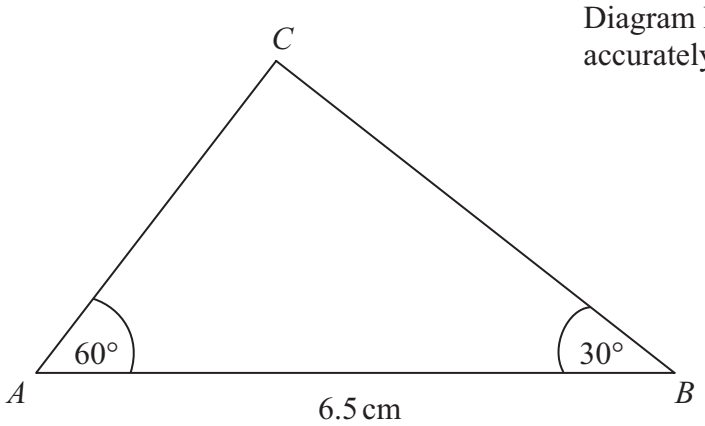


Diagram **NOT** accurately drawn

(a) Make an accurate drawing of triangle *ABC*.
The side *AB* has already been drawn for you.

A *B*

(2)

(b) Measure the size of the angle at *C* in your triangle.

..... °

(1)

Q9

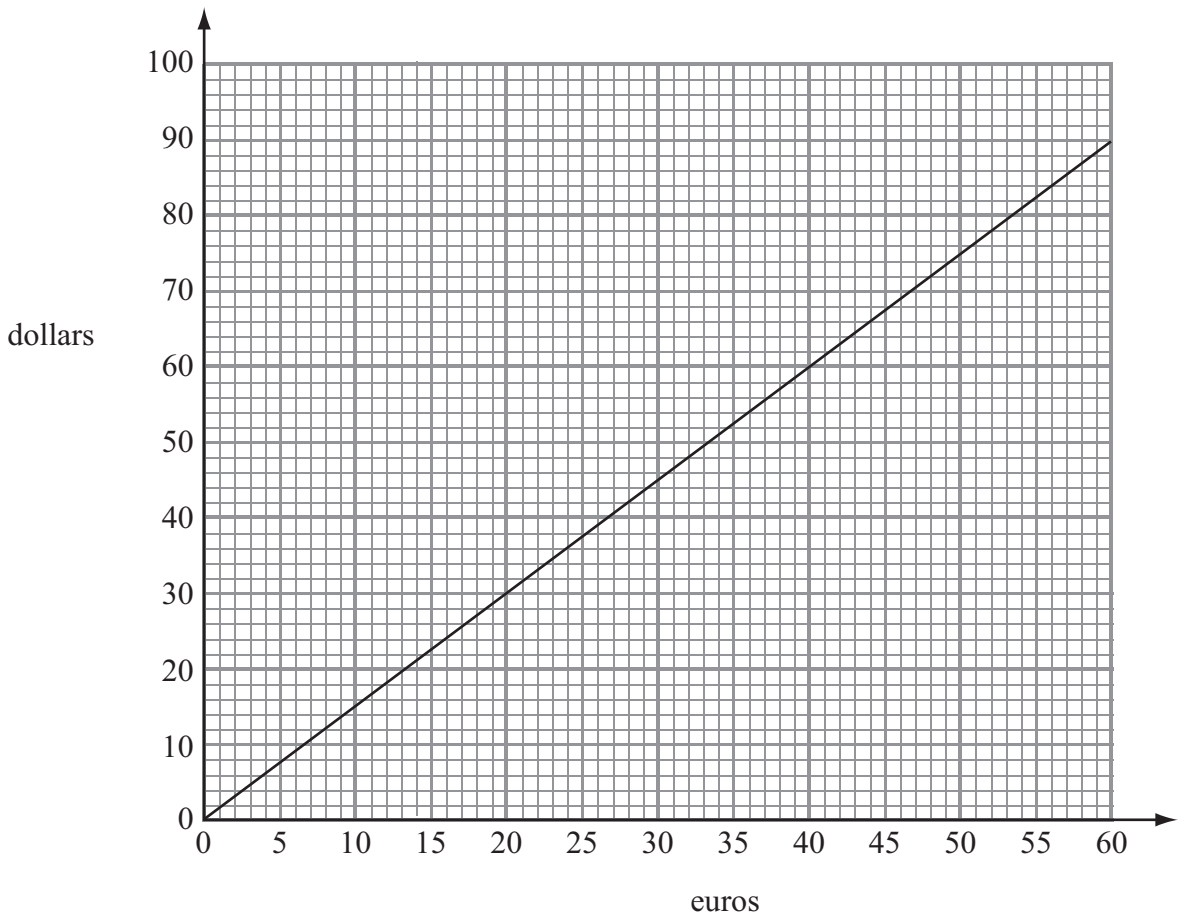
(Total 3 marks)

N 3 4 8 0 8 A 0 8 1 6

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Leave blank

10.



The conversion graph can be used to change between euros and dollars.

(a) Use this graph to change 30 euros into dollars.

..... dollars
(1)

(b) Use this graph to change 90 dollars into euros.

..... euros
(1)

Bill changes 100 euros to dollars.

(c) Change 100 euros to dollars.

..... dollars
(2)

(Total 4 marks)

Q10

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Leave blank

11. Work out $\frac{1}{8}+\frac{3}{4}$

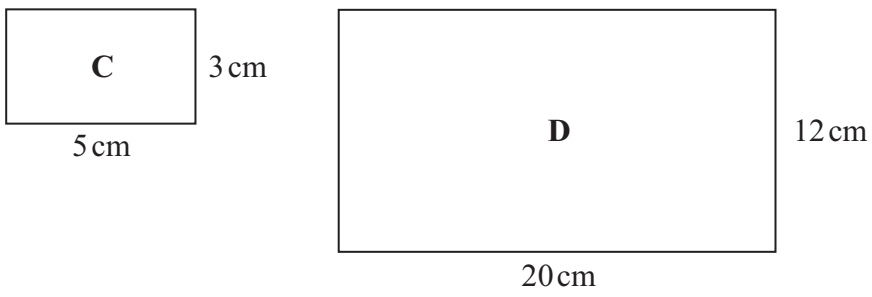
.....

Q11

(Total 2 marks)

12.

Diagram **NOT** accurately drawn



Rectangle **D** is an enlargement of rectangle **C**.

Find the scale factor of the enlargement.

.....

Q12

(Total 2 marks)

N 3 4 8 0 8 A 0 1 0 1 6

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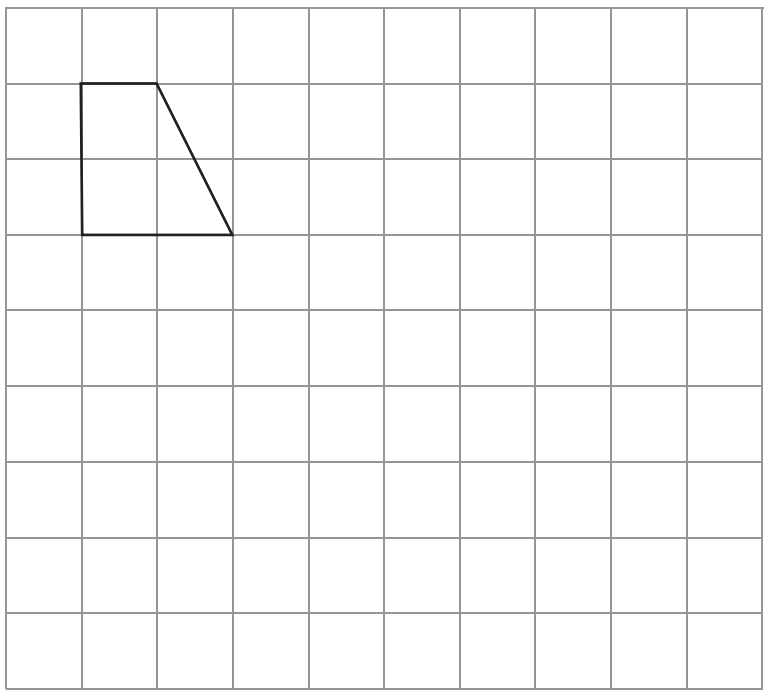
13. Work out 36×24

.....

(Total 3 marks)

Q13

14. On the grid, show how this trapezium tessellates.
You should draw at least 6 trapeziums.



(Total 2 marks)

Q14

N 3 4 8 0 8 A 0 1 1 1 6

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Leave blank

15. Mary scored 14 out of 20 in a test.

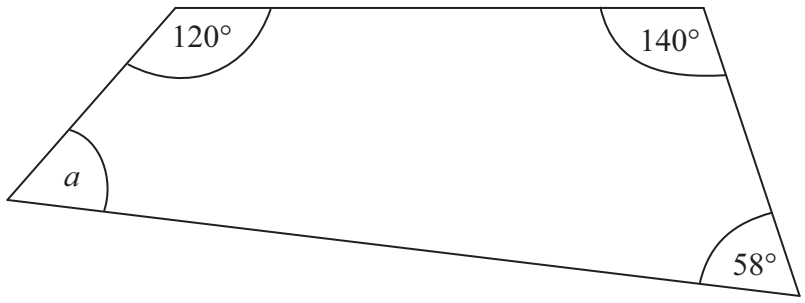
Find 14 out of 20 as a percentage.

..... %

(Total 2 marks)

Q15

16. Diagram **NOT** accurately drawn



Work out the size of the angle *a*.

..... °

(Total 2 marks)

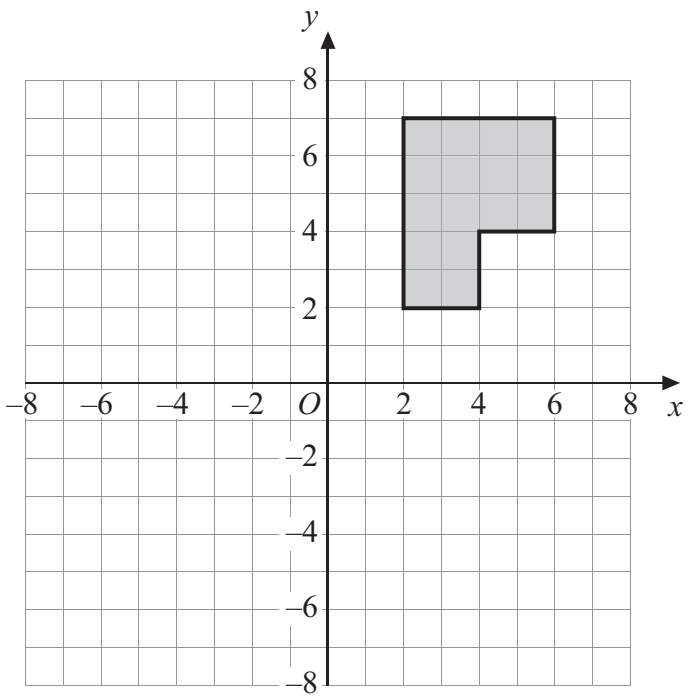
Q16

N 3 4 8 0 8 A 0 1 2 1 6

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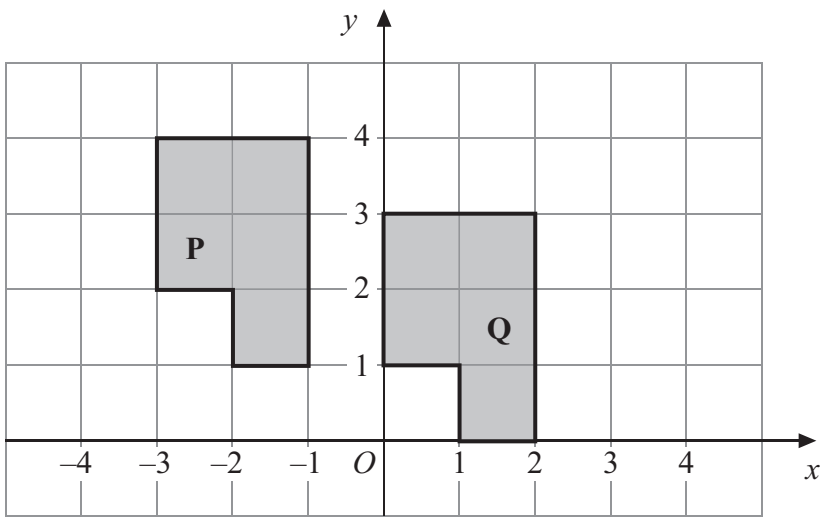
Leave blank

17.



(a) Rotate the shaded shape 90° clockwise about the point O.

(2)



(b) Describe fully the single transformation that will map shape **P** onto shape **Q**.

.....

(2)

Q17

(Total 4 marks)

N 3 4 8 0 8 A 0 1 3 1 6

Turn over

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Leave blank

18. Here is a list of ingredients for making **8** cheese scones.

Ingredients for 8 cheese scones
200 g self-raising flour
60 g butter
30 g cheese
150 m*l* milk

Work out the amount of each ingredient needed to make **12** cheese scones.

..... g self-raising flour

..... g butter

..... g cheese

..... m*l* milk

Q18

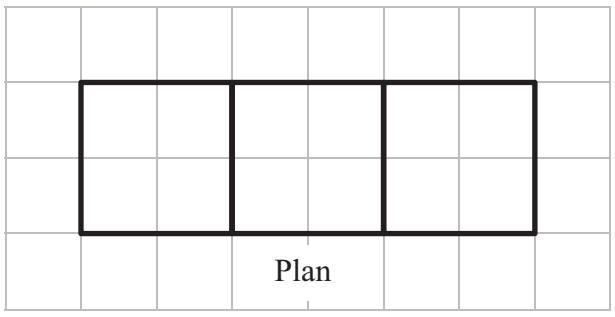
(Total 3 marks)

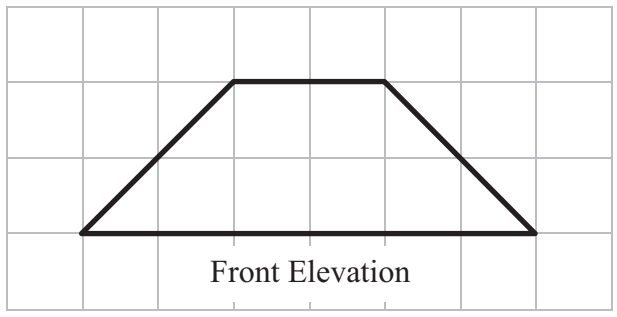
N 3 4 8 0 8 A 0 1 4 1 6

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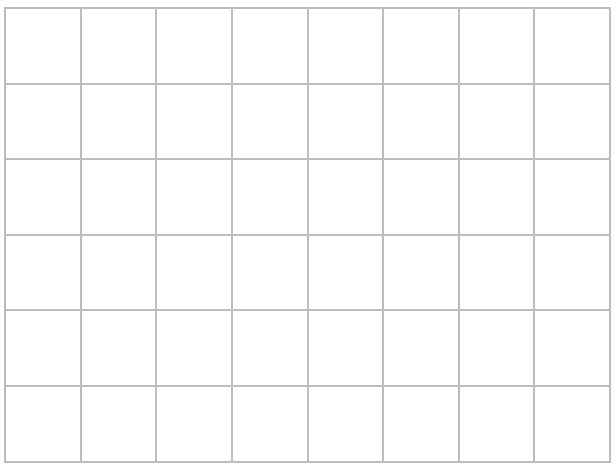
Leave blank

19. Here are the plan and front elevation of a solid shape.





(a) On the grid below, draw the side elevation of the solid shape.



(2)

(b) In the space below, draw a sketch of the solid shape.

(2) **Q19**

(Total 4 marks)

N 3 4 8 0 8 A 0 1 5 1 6

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Leave blank

20.

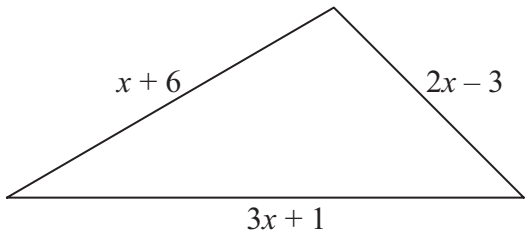


Diagram **NOT** accurately drawn

In the diagram, all measurements are in centimetres.

The lengths of the sides of the triangle are

$x + 6$
$2x - 3$
$3x + 1$

(a) Find an expression, in terms of x, for the perimeter of the triangle.

Give your expression in its simplest form.

.....

(2)

The perimeter of the triangle is 37 cm.

(b) Find the value of x.

$x =$ .....

(2)

Q20

(Total 4 marks)

TOTAL FOR PAPER: 60 MARKS

END

N 3 4 8 0 8 A 0 1 6 1 6

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Centre No.						Paper Reference								Surname	Initial(s)
Candidate No.						5	3	8	4	F	/	1	2	F	Signature

Paper Reference(s)

5384F/12F

Examiner's use only

Team Leader's use only

Edexcel GCSE

Mathematics (Modular) – 2381

Paper 12 (Calculator)

Foundation Tier



Unit 3

Monday 1 June 2009 – Morning

Time: 1 hour

Materials required for examination
Ruler graduated in centimetres and millimetres, protractor, compasses, pen, HB pencil, eraser, calculator. Tracing paper may be used.

Items included with question papers
Nil

Instructions to Candidates

In the boxes above, write your centre number, candidate number, your surname, initials and signature.
Check that you have the correct question paper.
Answer ALL the questions. Write your answers in the spaces provided in this question paper.
You must NOT write on the formulae page.
Anything you write on the formulae page will gain NO credit.
If you need more space to complete your answer to any question, use additional answer sheets.

Information for Candidates

The marks for individual questions and the parts of questions are shown in round brackets: e.g. **(2)**.
There are 18 questions in this question paper. The total mark for this paper is 60.
There are 20 pages in this question paper. Any blank pages are indicated.
Calculators may be used.
If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.

Advice to Candidates

Show all stages in any calculations.
Work steadily through the paper. Do not spend too long on one question.
If you cannot answer a question, leave it and attempt the next one.
Return at the end to those you have left out.

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W850/R5384F/57570 6/6/6/3

H 3 4 8 0 7 A 0 1 2 0

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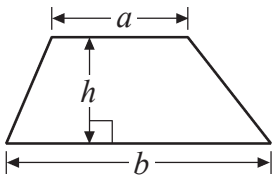
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GCSE Mathematics

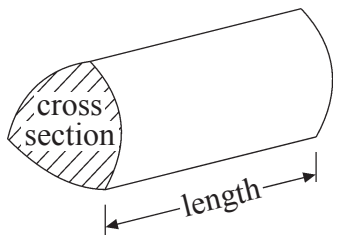
Formulae: Foundation Tier

You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.

Area of trapezium = $\frac{1}{2}(a + b)h$



Volume of prism = area of cross section × length



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Leave blank

Answer ALL EIGHTEEN questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

1. (a) Write $\frac{9}{10}$ as a decimal.

.....

(1)

(b) Write $\frac{3}{4}$ as a percentage.

..... %

(1)

(c) Write 23% as a fraction.

.....

(1)

(d) Work out $\frac{1}{5}$ of 50

.....

(1)

Q1

(Total 4 marks)

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2.

Cinema tickets	
Adult ticket:	£8.65
Child ticket:	£4.90
Senior ticket:	£5.85

Tony buys one child ticket and one senior ticket.

(a) Work out the total cost.

£ .....

(1)

Stephanie buys adult tickets only.
The total cost is £60.55

(b) How many adult tickets does she buy?

.....

(2)

Kamala buys one adult ticket and two child tickets.
She pays with a £20 note.

(c) How much change should she get?

£ .....

(3)

(Total 6 marks)

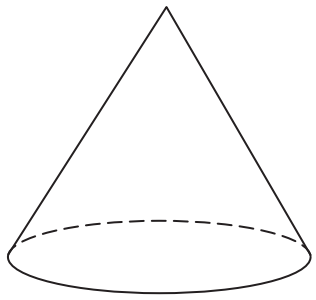
Q2

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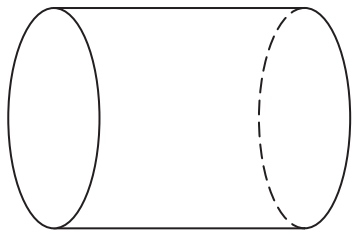
Leave blank

3. Write down the name of each of these two 3-D shapes.

(i)



(ii)



(i) ..... (ii) .....

Q3

(Total 2 marks)

4. (a) Measure, in centimetres, the length of the line *AB*.



..... cm

(1)

(b) Mark the midpoint of the line *AB* with a cross (✕).

(1)

Q4

(Total 2 marks)

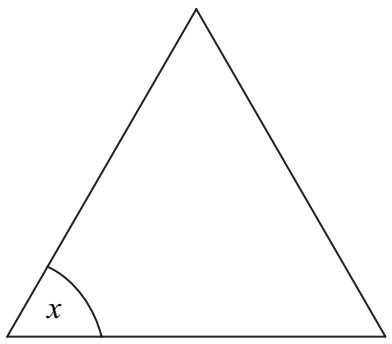
H 3 4 8 0 7 A 0 5 2 0

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Leave blank

5. (a) Here is an equilateral triangle.

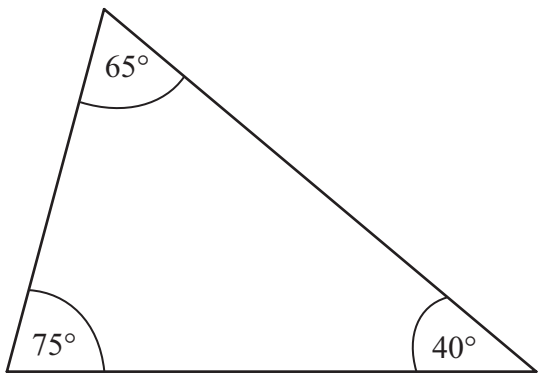


Write down the size of the angle marked x.

x = ... °

(1)

(b) Here is a triangle.



Rob says this triangle is a right-angled triangle.

Rob is wrong.
Explain why.

.....

.....

.....

(1)

(Total 2 marks)

Q5

H 3 4 8 0 7 A 0 6 2 0

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Leave blank

6. You can use this rule to work out the cost, in pounds, of hiring a carpet cleaner.

> Multiply the number of days hire by 6
>
> Add 4 to your answer.

Jill hires the carpet cleaner for 3 days.

(a) Work out the cost.

£ .....

(2)

Carlos hires the carpet cleaner.
The cost is £52

(b) Work out for how many days Carlos hires the carpet cleaner.

..... days

(3)

Q6

(Total 5 marks)

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7. Kaz buys a car.
The normal price of the car is £7200

Kaz gets a 10% discount.

(i) Work out 10% of £7200

£ .....

(ii) Work out how much Kaz pays for the car.

£ **Q7**

(Total 3 marks)

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8. Here is a cuboid.

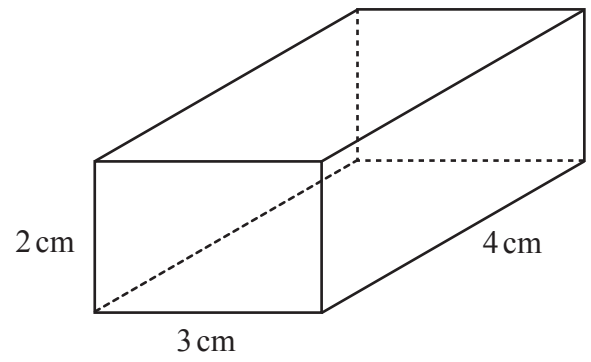


Diagram **NOT** accurately drawn

Draw an accurate net of this cuboid.

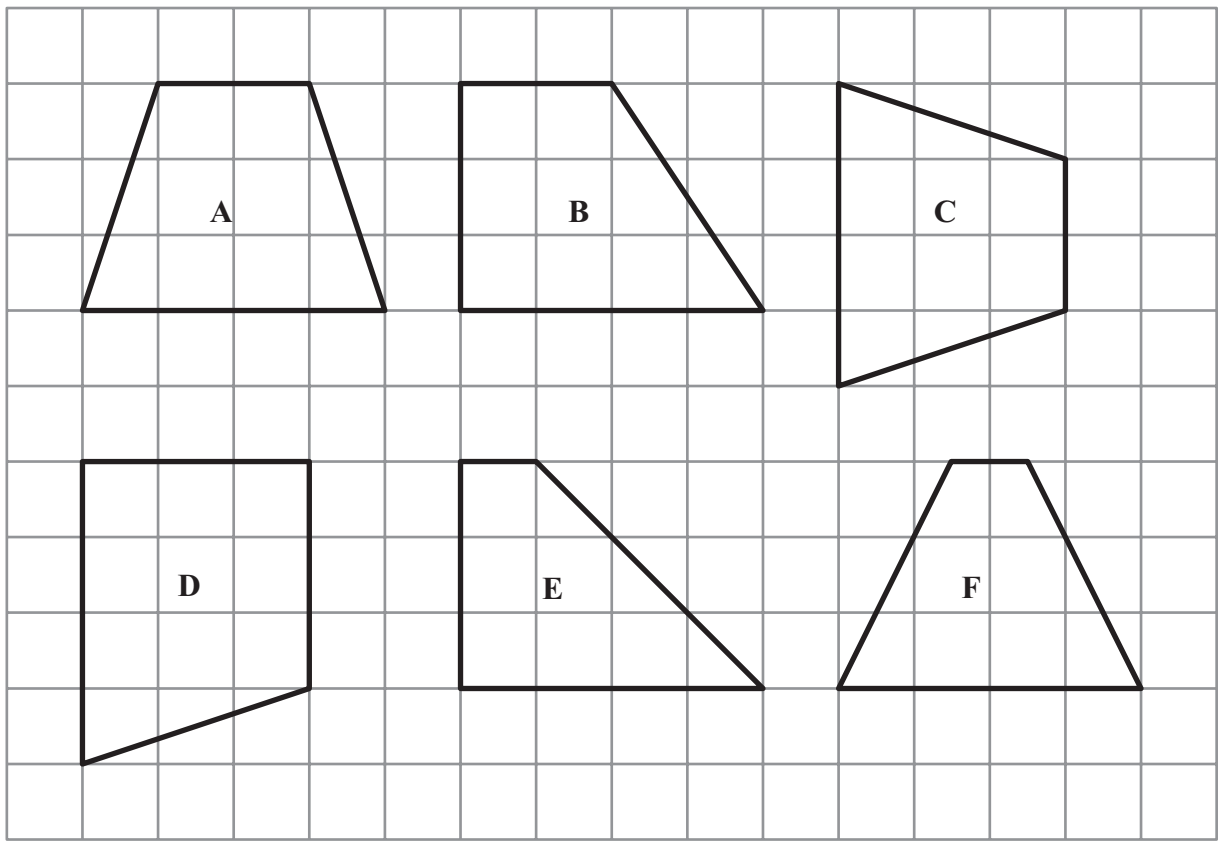
Q8

(Total 3 marks)

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Leave blank

9. Here are 6 shapes drawn on a grid.



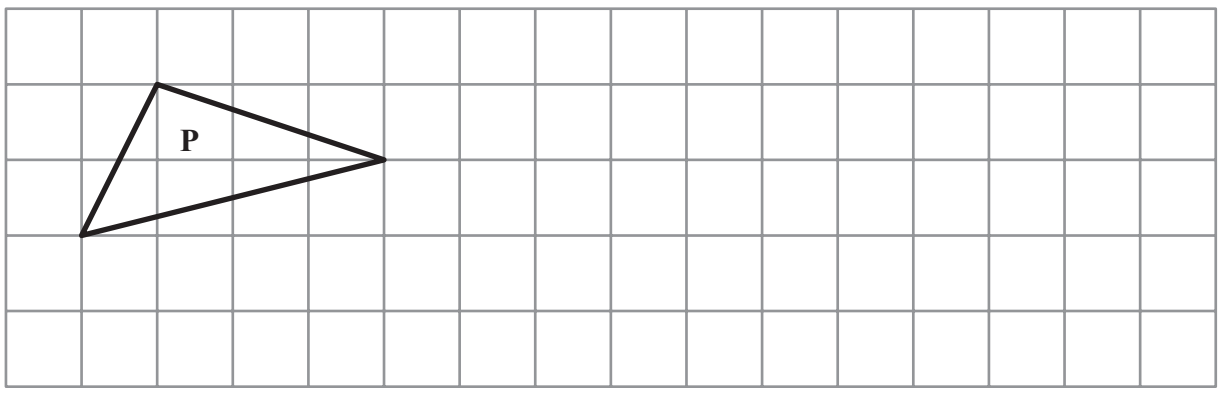
Two of these shapes are congruent.

(a) Write down the letters of these two shapes.

..... and .....

(1)

(b) On the grid below, draw a shape that is congruent to shape **P**.



(1)

Q9

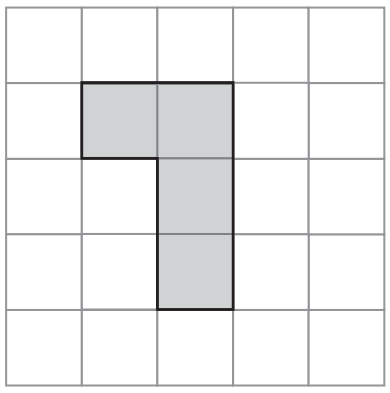
(Total 2 marks)

H 3 4 8 0 7 A 0 1 0 2 0

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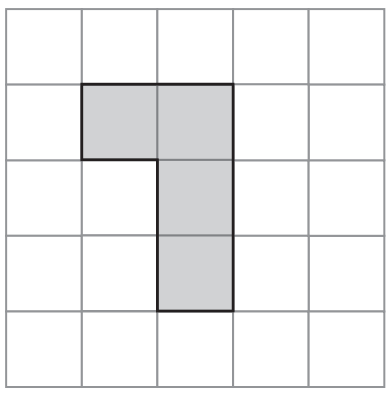
Leave blank

10. (a) Shade **one** more square to make a pattern with 1 line of symmetry.



(1)

(b) Shade **one** more square to make a pattern with rotational symmetry of order 2



(1) **Q10**

(Total 2 marks)

H 3 4 8 0 7 A 0 1 1 2 0

Turn over

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Leave blank

11. 36 students each went to one revision class.

$\frac{1}{6}$ of the students went to the physics revision class.

$\frac{2}{9}$ of the students went to the biology revision class.

All of the other students went to the chemistry revision class.

How many students went to the chemistry revision class?

.....

Q11

(Total 3 marks)

12. $F = 1.8C + 32$

(a) Work out the value of F when $C = -8$

.....

(2)

(b) Work out the value of C when $F = 68$

.....

(2) **Q12**

(Total 4 marks)

H 3 4 8 0 7 A 0 1 2 2 0

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13. Tania went to Italy.
She changed £325 into euros (€).

The exchange rate was £1 = €1.68

(a) Change £325 into euros (€).

€ .....
(2)

When she came home she changed €117 into pounds.

The new exchange rate was £1 = €1.50

(b) Change €117 into pounds.

£ .....
(2)

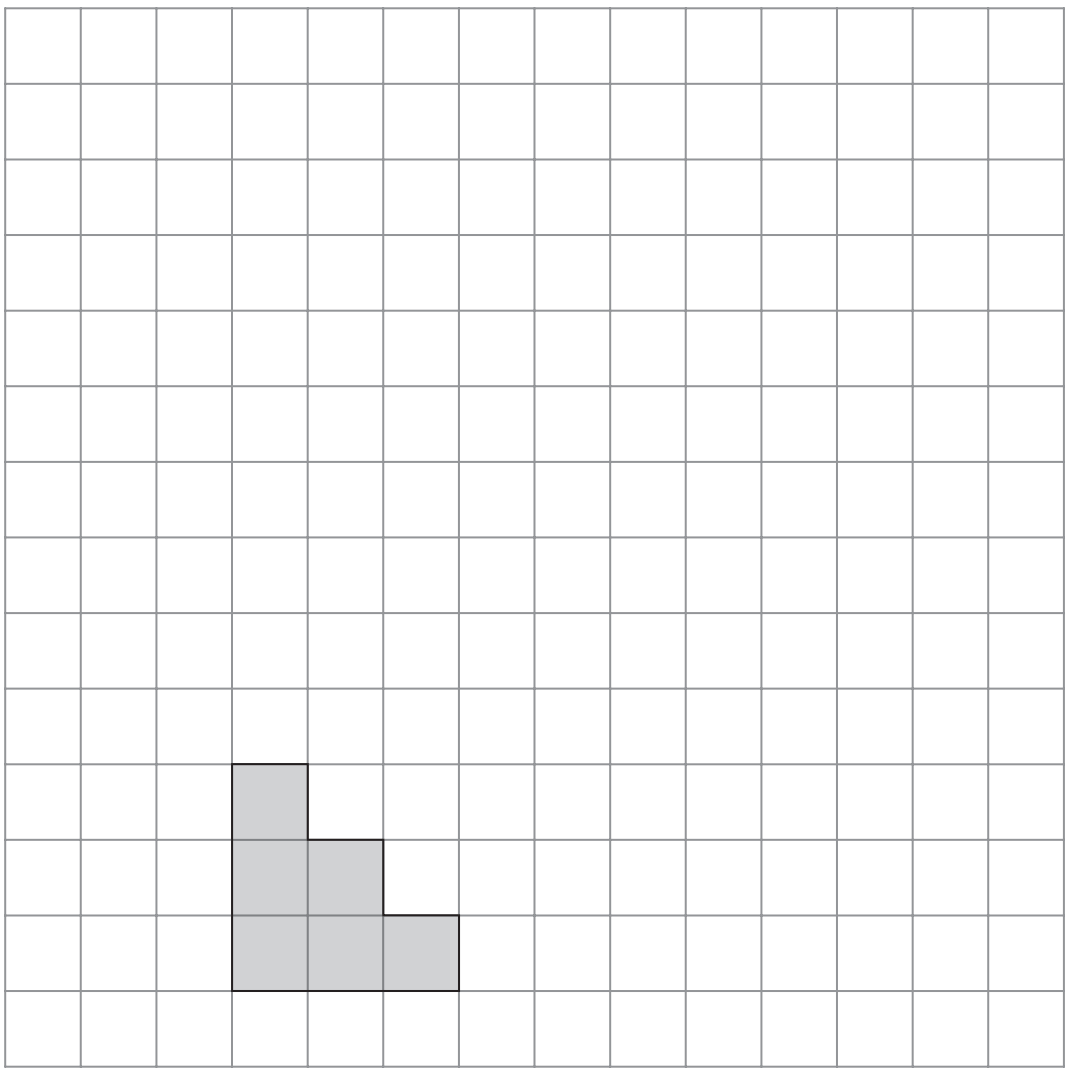
Q13

(Total 4 marks)

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14.



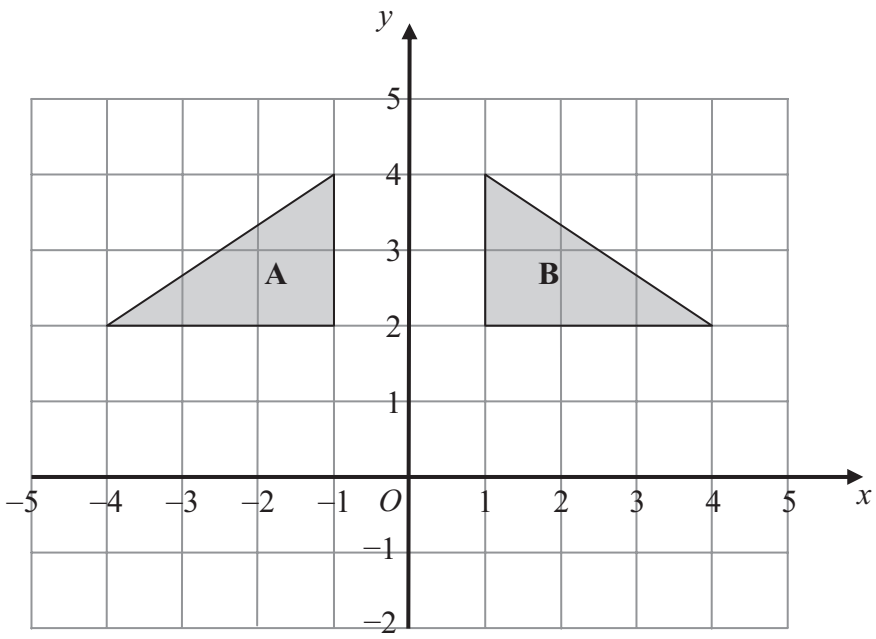
(a) On the grid, draw an enlargement, scale factor 2, of the shaded shape.

(2)

H 3 4 8 0 7 A 0 1 4 2 0

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Leave blank



(b) Describe fully the single transformation that maps triangle **A** onto triangle **B**.

.....

(2)

(Total 4 marks)

Q14

Turn over

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Leave blank

15. There are some sweets in a bag.

18 of the sweets are toffees.
12 of the sweets are mints.

(a) Write down the ratio of the number of toffees to the number of mints.
Give your ratio in its simplest form.

..... : .....

(2)

There are some oranges and apples in a box.
The total number of oranges and apples is 54
The ratio of the number of oranges to the number of apples is 1 : 5

(b) Work out the number of apples in the box.

.....

(2) **Q15**

(Total 4 marks)

16. (a) Simplify $t^6 \times t^2$

.....

(1)

(b) Simplify $\frac{m^8}{m^3}$

.....

(1) **Q16**

(Total 2 marks)

H 3 4 8 0 7 A 0 1 6 2 0

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17. Here is a tile in the shape of a semicircle.

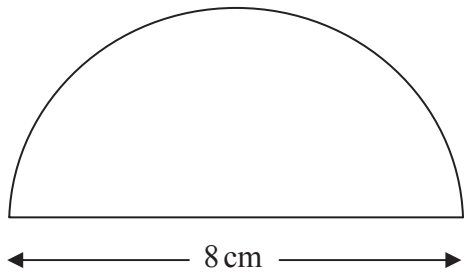


Diagram **NOT** accurately drawn

The diameter of the semicircle is 8 cm.

Work out the perimeter of the tile.
Give your answer correct to 2 decimal places.

..... cm

Q17

(Total 3 marks)

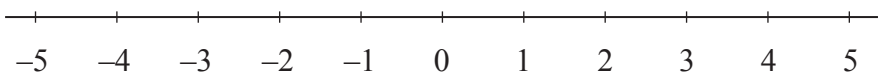
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18. (a) $x < -2$

Show this inequality on the number line.



(2)

(b) Solve $5(y + 2) = 4 - 7y$

$y =$ .....

(3) **Q18**

(Total 5 marks)

TOTAL FOR PAPER: 60 MARKS

END

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H 3 4 8 0 7 A 0 1 9 2 0

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Summer 2009

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Mark Scheme (Results)

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5384F/11F					
Question		**Working**	**Answer**	**Mark**	**Notes**
1		$30-(16+9)$	5	2	M1 30 – "(16 + 9)" or "30 − 16" − 9 or "30 − 9" − 16 A1 cao
2	(a)		207	2	M1 for a valid method (condone one error) or sight of 7 (as units) in working or answer OR $'193+7'+200$ or $'193+200'+7$ A1 cao
	(b)		–5	1	B1 cao
	(c)		–15	1	B1 cao
	(d)		6	1	B1 cao
3	(a)		30	1	B1 for 30
	(b)		5	1	B1 for 5
4		(27 + 3) ÷ 2	17 15	3	B1 for output 17 M1 for (27 + 3) ÷ 2 or ← ÷2 ← +3 seen A1 for input 15 SC: B1 for input of 60 or 12 or 16.5
5	(i)		E or C	1	B1 for E or C or both
	(ii)		B	1	B1 cao
	(iii)		A	1	B1 cao
	(iv)		C or A	1	B1 for C or A or both

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5384F/11F					
Question		**Working**	**Answer**	**Mark**	**Notes**
6	(a)		Edinburgh	1	B1 for Edinburgh or –7
	(b)		5	1	B1 cao
	(c)		Leeds	1	B1 for Leeds or –6 to 3 or 9 or -9
7	(a)		6	1	B1 cao
	(b)		5	1	B1 cao
	(c)		7	1	B1 cao
8	(a)		08 30	1	B1 for 08 30 oe
	(b)		17	1	B1 cao
	(c)		10 15	1	B1 for 10 15 oe
9	(a)		Diagram	2	B2 within guidelines
	(b)		90	1	B1 for an angle in range 86 to 94 **or** ft 'angle' measured correctly within $\pm 2^o$
10	(a)		45	1	B1 for 44 - 46
	(b)		60	1	B1 cao
	(c)		150	2	M1 for a complete method e.g. reading from graph at 50 euros and doubling (allow ±1mm tolerance in reading from graph) A1 for 140 – 160 SC: B2 for 200

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Question		**Working**	**Answer**	**Mark**	**Notes**
11		$\frac{1}{8}+\frac{6}{8}$	$\frac{7}{8}$	2	M1 for $\frac{6}{8}$ OR correct attempt to make fractions have a common denominator with at least one fraction correct OR for 0.125 and 0.75 seen A1 for $\frac{7}{8}$ oe or 0.875
12			4	2	M1 for $\frac{20}{5}$ or $\frac{5}{20}$ or $\frac{12}{3}$ or $\frac{3}{12}$ OR 3×4 and 5×4 seen A1 cao SC: B1 for 4:1 or 1:4 oe
13		$20\times36=720$ $4\times36=144$ **30** **6** **20** 600 120 720 **4** 120 24 144 720 144 3 6 8 (0 6 | 1 2 / 1 2 | 2 4) 2 4 6 4	864	3	M1 for a complete method with relative place value correct. Condone 1 multiplication error, addition not necessary. M1 (dep) for addition of the appropriate elements of the calculation. [Note: Repeated addition of 24 lots of 36 (36 lots of 24) gets M1 only] A1 cao

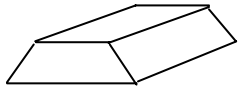
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5384F/11F					
Question		**Working**	**Answer**	**Mark**	**Notes**
14			Correct tessellation	2	B2 for at least 6 correct shapes (including initial shape) correctly tessellating (B1 for at least 4 correct shapes (including initial shape) correctly tessellating)
15		$\frac{14}{20}\times 100$	70	2	M1 for $\frac{14}{20}\times 100$ or $\frac{1400}{20}$ or 14 × 5 seen or $\frac{70}{100}$ or $\frac{7}{10}$ OR for a correct method to turn fraction into percentage OR for a correct decomposition, e.g. 10+2+2=50%+10%+10% (condone one error) A1 cao
16		$360-(120+140+58)$	42	2	M1 $360-"(120+140+58)"$ or equivalent) or for (a + 58 + 120 + 140 = 360) oe seen A1 cao [Note: The subtraction MUST be from 360]
17	(a)		Vertices at (2, –2), (7, –2), (7, –6), (4, –6), (4, –4), (2, –4)	2	B2 for a fully correct rotation [B1 for correct shape with correct orientation **OR** a 90° anticlockwise rotation about *0* **OR** a 180° rotation about *O* **OR** for any 3 correct sides in the correct position]
	(b)		Translation by $\begin{pmatrix}3\\-1\end{pmatrix}$	2	B1 for translation B1 (indep) for $\begin{pmatrix}3\\-1\end{pmatrix}$ or 3 right and 1 down

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5384F/11F					
Question		**Working**	**Answer**	**Mark**	**Notes**
18			300, 90, 45, 225	3	M2 for any one of 200 + 100 **or** 60 + 30 **or** 30 + 15 **or** 150 + 75 **or** 300 **or** 90 **or** 45 **or** 225 seen. A1 cao or M1 for 12÷8 or $6 \div 4$ or 3 ÷ 2 or sight of 1.5 M1 for 200 × "1.5" or 60 × "1.5" or 30 × "1.5" or 150 × "1.5" A1 cao or M1 200 ÷ 8 or 25 M1 25 × 12 or 300 A1 cao or M1 200 ÷ 4 or 50 M1 50 × 6 or 300 A1 cao or M1 200 ÷ 2 or 100 M1 100 × 3 or 300 A1 cao (In any of the above methods the M marks can be awarded for equivalent calculations with 60, 30 or 150)

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Question		**Working**	**Answer**	**Mark**	**Notes**
19	(a)			2	M1 rectangle with either correct width or height or any square A1 cao
	(b)			2	B2 for a correct sketch (B1 any 3-D sketch of no more than 4 faces seen, with a trapezoidal face)
20	(a)	$2x - 3 + x + 6 + 3x + 1$	$6x + 4$	2	M1 for $2x - 3 + x + 6 + 3x + 1$ **or** $6x + k$ seen A1 for $6x + 4$, condone $P = 6x + 4$ but not $x=6x+4$ or $0=6x+4$
	(b)	$6x + 4 = 37$ $6x = 33$ $x = 5.5$	5.5	2	M1 for "$6x + 4$" = 37, must be 3 term linear equation with coefficient of $x \neq 1$ A1 for 5.5, $\frac{11}{2}$, $5\frac{1}{2}$ oe or ft for their "$6x + 4$" provided x is positive. **OR** M1 for a correct 2 stage numerical process to find x A1 for 5.5, $\frac{11}{2}$, $5\frac{1}{2}$ oe or ft for their "$6x + 4$" provided x is positive. T&I Allow 2 marks for 5.5oe , otherwise 0 (**SC** B1 " $x + k = 37$" or "$kx = 37$) NB Do not award marks in (a) for 6x+4 in (b)

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Question		**Working**	**Answer**	**Mark**	**Notes**
1	(a)		0.9	1	B1 for 0.9
	(b)		75	1	B1 for 75 cao
	(c)		$\frac{23}{100}$	1	B1 for $\frac{23}{100}$ o.e.
	(d)		10	1	B1 for 10 cao
2	(a)	5.85 + 4.90	10.75	1	B1 for 10.75
	(b)	60.55 ÷ 8.65	7	2	M1 for 60.55 ÷ 8.65 or 8.65 × 7 = 60.55 or for at least 4 repeated additions or subtractions of 8.65 A1 for 7 cao
	(c)	8.65 + (4.90 + 4.90) 20 – 18.45	1.55	3	M1 for 8.65 + (4.90 + 4.90) M1 (dep) for 20 – '18.45' A1 for 1.55 cao SC: Award B1 for sight of 18.45 or 6.45 or 10.20 Award B2 for 155
3	(i)		Cone	1	B1 for cone or alternative spellings that sound like "cone".
	(ii)		Cylinder	1	B1 for cylinder or alternative spellings that sound like "cylinder". Accept circular based prism.
4	(a)		6.4	1	B1 for 6.2 – 6.6 inclusive; accept 62-66 with mm stated.
	(b)		Midpoint marked	1	B1 for midpoint marked at 3 – 3.4 inclusive

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Question	**Working**	**Answer**	**Mark**	**Notes**
5 (a)		60	1	B1 for 60 cao
(b)		reason	1	B1 for no 90º angle oe
6 (a)	$6 \times 3 + 4$	22	2	M1 for 6×3 or '6×3' + 4 or 18 seen A1 for 22, accept 22.00 or 22.0
(b)	$52 - 4 = 48$ $48 \div 6 =$	8	3	M1 for $52 - 4$ or 48 seen M1 (dep) for '$52 - 4$' $\div 6$ or $48 \div 6$ A1 for 8 cao **Alternative method:** M2 for a systematic attempt using $6 \times d + 4$ at least twice with at least one d greater than 5 with correct answers A1 for 8 cao
7 (i)	$\frac{10}{100} \times 7200$	720	2	M1 for $\frac{10}{100} \times 7200$ oe A1 (accept 720.00 or 720.0)
(ii)	$7200 - 720$	6480	1	B1 ft from (i) for 7200 – '720'
8		correct net	3	B3 for correct net (B2 for 5 faces drawn, all correct or 6 faces drawn with 4 or 5 faces correct (B1 for a fully correct net with 6 faces for any cuboid **)** Note: Accept outline only drawn
9 (a)		A and C	1	B1 c for A and C or C and A
(b)		Shape drawn	1	B1 for correct shape, any orientation or reflection, ±2 mm

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Question	**Working**	**Answer**	**Mark**	**Notes**
10 (a)		shading	1	B1 for one square shaded to get one of  or  or 
(b)		shading	1	B1 for one square shaded to get 
11	$\frac{1}{6}\times 36 = 6$ $\frac{2}{9}\times 36 = 8$ 36 – (8 + 6)	22	3	M1 for $\frac{1}{6}\times 36$ or $36\div 6$; $\frac{2}{9}\times 36$ or $36\div 9\times 2$ or 6 seen as long as not with incorrect working or 8 seen or 14 seen or $\frac{1}{6}+\frac{2}{9}$ or $\frac{7}{18}$ oe M1 (dep) for 36 – '(8+ 6)' or $36-"\left(\frac{2}{9}+\frac{1}{6}\right)"\times 36$ or $\left(1-"\frac{1}{6}"+"\frac{2}{9}"\right)\times 36$ A1 for 22 cao SC B2 for $\frac{22}{36}$ oe fraction

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Question		**Working**	**Answer**	**Mark**	**Notes**
12	(a)	$1.8 \times -8 + 32$	17.6	2	M1 for 1.8×-8 or -14.4 or $\frac{-72}{5}$ seen or $32 - '1.8 \times 8'$ or $1.8 \times -8 + 32$ seen A1 for 17.6 or $\frac{88}{5}$ or 17.60 oe
	(b)	$68 = 1.8C + 32$ $1.8C = 68 - 32$ $C = 36 \div 1.8$	20	2	M1 for $68 - 32$ or 36 or $68 = 1.8C + 32$ seen; Condone replacement of C by another letter. A1 for 20 cao NB: Trial and improvement scores 0 or 2
13	(a)	325×1.68	546	2	M1 for 325×1.68 seen or digits 546 A1 for 546, accept 546.00, 546.0
	(b)	$117 \div 1.5$	78	2	M1 for $117 \div 1.5$ seen or digits 78 A1 for 78, accept 78.00, 78.0
14	(a)		Correct shape	2	B2 for correct shape; any orientation. (B1 for any two sides correct or all correct for scale factor other than 1 or 2), tolerance to within half square
	(b)		Reflection in line $x = 0$	2	B1 for reflection, reflect, reflected. B1 for line $x = 0$ or y-axis NB: More than one transformation should be awarded 0 marks.

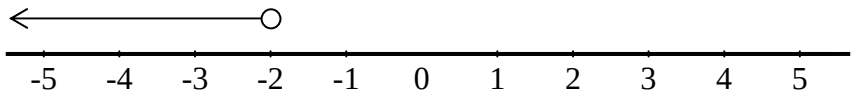
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Question	**Working**	**Answer**	**Mark**	**Notes**
15 (a)	18 ÷ 6 : 12 ÷ 6	3 : 2	2	M1 for 18 : 12 or 12 : 18 or 1.5 : 1 oe or 1:0.67 oe or correct ratio reversed eg 2 : 3 A1 for 3 : 2 or 1 : 0.666 … [recurring]
(b)	5 + 1 = 6 54 ÷ 6 = 9 5 × 9	45	2	M1 for $\frac{5}{5+1}\times 54$ or $\frac{1}{5+1}\times 54$ or 54 ÷ '5+1' or 54 × 5 or 270 or 9 : 45 or 9 seen, as long as it is not associated with incorrect working A1 for 45 cao
16 (a)	t^{6+2}	t^8	1	B1 for t^8 or for t^{6+2}
(b)	m^{8-3}	m^5	1	B1 for m^5 or for m^{8-3}
17	(0.5 × 3.14… × 8) + 8	20.56 – 20.58	3	M2 for (0.5 × π × 8) or π × 4 or (π × 8 + 8) or (0.5 x π × 8 + 8) oe (M1 for π × 8 or 2π × 4 or for a value 25.1– 25.2 inclusive unless seen with incorrect working eg πr^2) A1 for 20.56 – 20.58 (**SC**: B2 if M0 scored for 12.56 – 12.58)

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Question	**Working**	**Answer**	**Mark**	**Notes**
18 (a)		See diagram below	2	B2 for correct directed line from –2, ±2 mm and an empty circle (B1 for only one of these correct)
(b)	$5y + 10 = 4 - 7y$ $12y + 10 = 4$ $12y = -6$ $y = -½$	–½	3	B1 for $5y + 10$ M1 for $5y + 7y = 4 -$ "10" oe A1 for –½ oe **OR** M1 for $y + 2 = \frac{4-7y}{5}$ oe M1 for $y +$ " $\frac{7y}{5}$ " = " $\frac{4}{5}$ " – 2 oe A1 for –½ oe

Question 18a



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