WJEC GCSE MATHEMATICS (LINEAR)

MATHS



EXAM QUESTION PACK

PAPER 1 FOUNDATION TIER 0185 PAPERS

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Surname	Centre Number	Candidate Number
Other Names		0

WJEC CBAC

GCSE

185/07

MATHEMATICS
FOUNDATION TIER
PAPER 1

P.M. WEDNESDAY, 9 November 2011

2 hours

CALCULATORS ARE NOT TO BE USED FOR THIS PAPER

INSTRUCTIONS TO CANDIDATES

Use black ink or black ball-point pen.

Write your name, centre number and candidate number in the spaces at the top of this page.

Answer **all** the questions in the spaces provided.

Take π as 3·14.

INFORMATION FOR CANDIDATES

You should give details of your method of solution when appropriate.

Unless stated, diagrams are not drawn to scale.

Scale drawing solutions will not be acceptable where you are asked to calculate.

The number of marks is given in brackets at the end of each question or part-question.

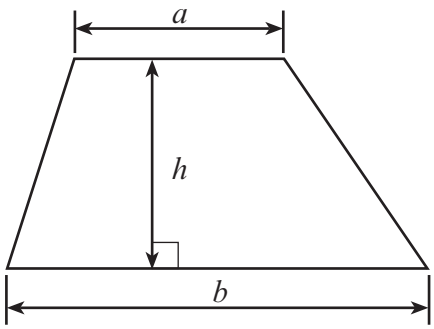
For Examiner's use only		
Question	**Maximum Mark**	**Mark Awarded**
1	11	
2	8	
3	7	
4	5	
5	4	
6	5	
7	3	
8	5	
9	4	
10	7	
11	6	
12	5	
13	4	
14	5	
15	6	
16	7	
17	4	
18	4	
TOTAL MARK		

0185 070001

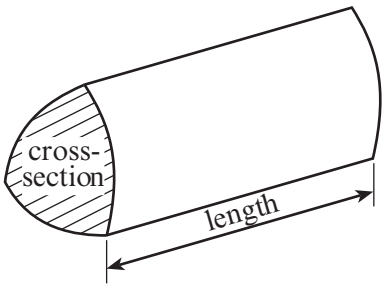
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Formula List

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



Volume of prism = area of cross-section × length



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1. *(a)* (i) Write down, in figures, the number twenty three thousand and sixty two.

.....

(ii) Write down, in words, the number 85 105.

.....

[2]

(b) Using only the numbers in the following list,

47 54 88 23 49 46 33

write down

(i) two numbers that add up to 70,

.....

(ii) two numbers which differ by 42,

.....

(iii) a multiple of 7.

.....

[3]

(c) Write 5627

(i) correct to the nearest 10,

.....

(ii) correct to the nearest 100.

.....

[2]

(d) Write down all the factors of 15.

.....

.....

.....

[2]

(e) Tim uses each of the digits 3, 9, 2 and 8, once and once only, to make four-digit numbers.

(i) What is the largest number that he can make?

.....

(ii) What is the smallest even number that he can make?

.....

[2]

0185 070003

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2. Bethan reads a poem and writes down each of the letters A, E, N, S and T as they appear. Her results are shown below.

A	N	N	S	N	E	A	E	E	N
E	N	A	E	S	N	S	N	A	A
N	A	E	N	N	S	E	E	E	A
S	T	E	E	S	N	E	S	A	A

(a) Complete the frequency table below.

Letter	Tally	Frequency
A		
E		
N		
S		
T		
	Total	.....

[3]

(b) Write down the mode .....

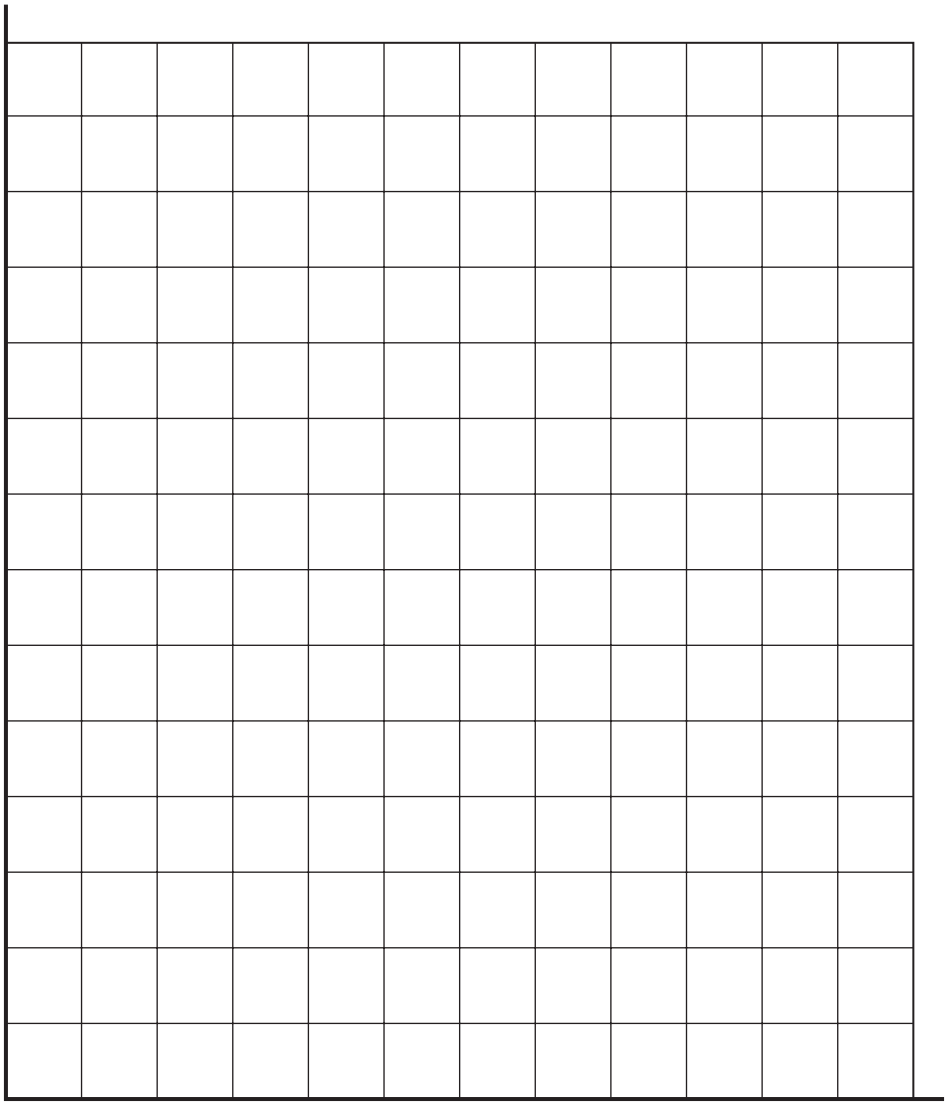
[1]

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(c) Using the squared paper below, draw a suitable bar chart for the data given in the table.

[4]



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3. *(a)* Draw a line connecting each of the following words to the correct shape. One has been done for you.

[4]

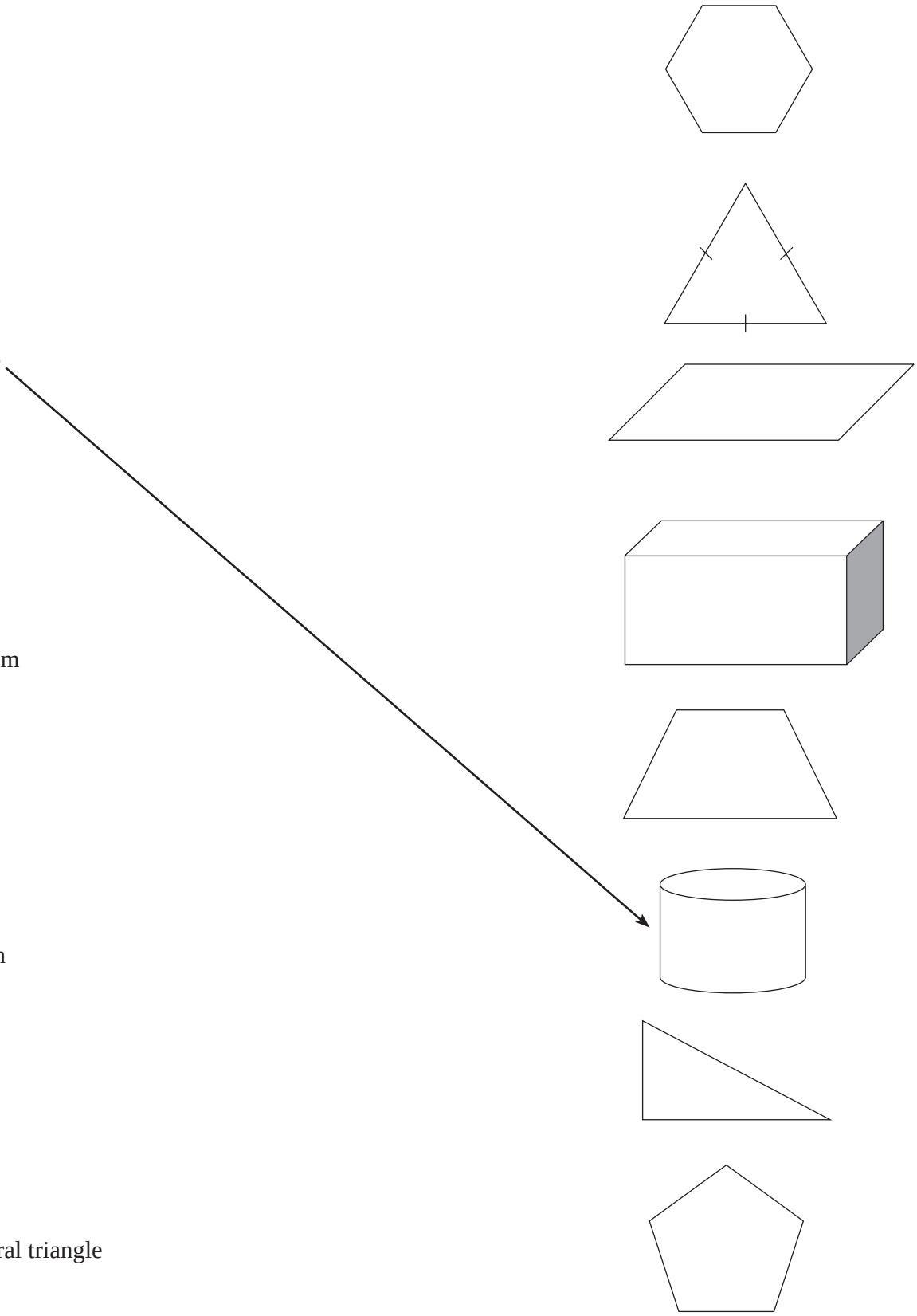
Cuboid

Cylinder

Trapezium

Pentagon

Equilateral triangle

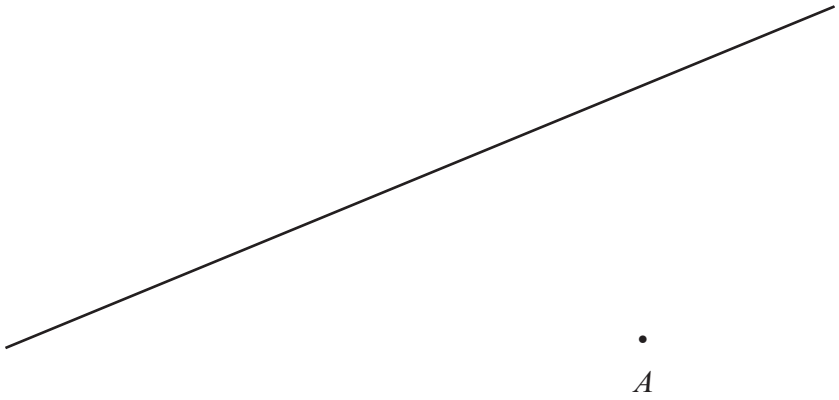


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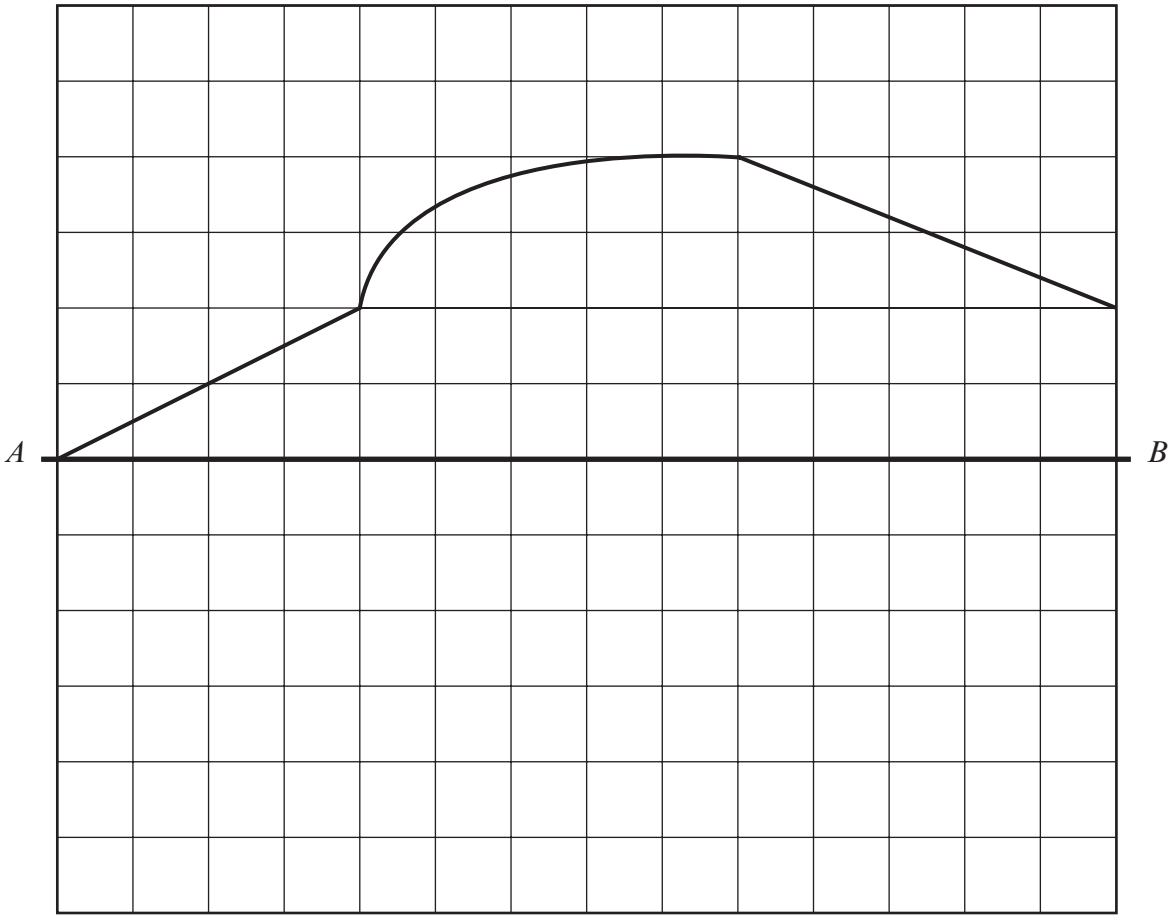
(b) Draw a line through the point A that is parallel to the given line below.

[1]



(c) Copy the shape below so that AB is a line of symmetry.

[2]



0185 070007

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4. *(a)* Write down the next term in **each** of the following sequences.

(i) 16, 22, 28, 34, ...

(ii) 90, 82, 74, 66, ...

.....

.....

[2]

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

Write 76% as a decimal .....

Write $\frac{3}{4}$, 76% and 0·72 in ascending order.

.....

.....

.....

.....

[3]

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5. The diagram represents an 11 cm by 5 cm rectangle.

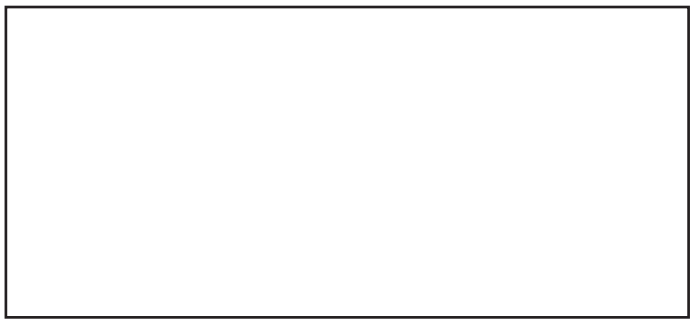


Diagram not drawn to scale

(a) Calculate the area of the rectangle, giving the units of your answer.

.....

.....

.....

[3]

(b) Calculate the perimeter of the rectangle.

.....

.....

.....

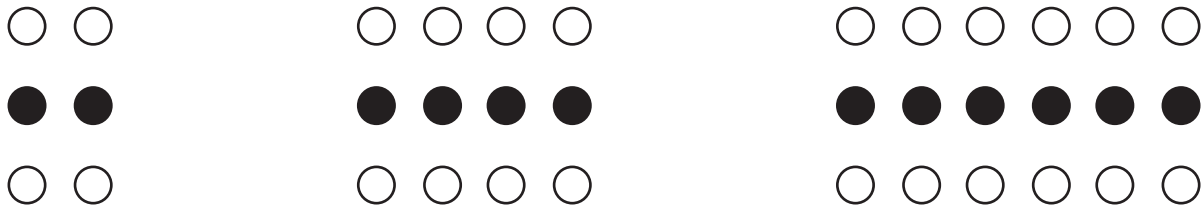
[1]

0185 070009

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6. The following patterns have been made using black discs and white discs.



Pattern 1 Pattern 2 Pattern 3

(a) Draw Pattern 4 in the space below.

[1]

(b) Complete the following table.

Pattern number	1	2	3	4	5
Number of black discs	2	4	6		
Number of white discs	4	8	12		

[2]

(c) Without drawing any more patterns, answer the following two questions.

(i) Write down the number of black discs in Pattern 45.

.....

.....

(ii) In a certain pattern there are 200 white discs. How many black discs are there in that pattern?

.....

.....

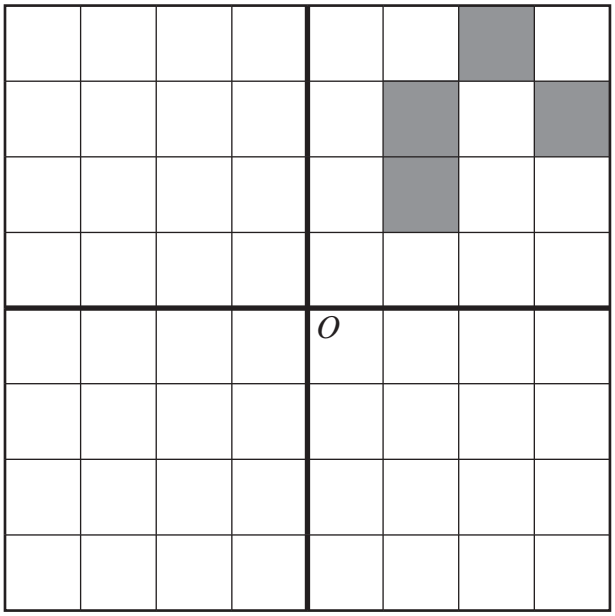
[2]

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7. Draw patterns like the given one in each of the other 3 sections so that the completed pattern has rotational symmetry of order 4 about O.

[3]



8. *(a)* A full crate holds 36 bottles.
A farmer has 48 full crates.
How many bottles is this?

.....

.....

.....

.....

.....

.....

.....

.....

.....

[3]

(b) Calculate 8% of 300.

.....

.....

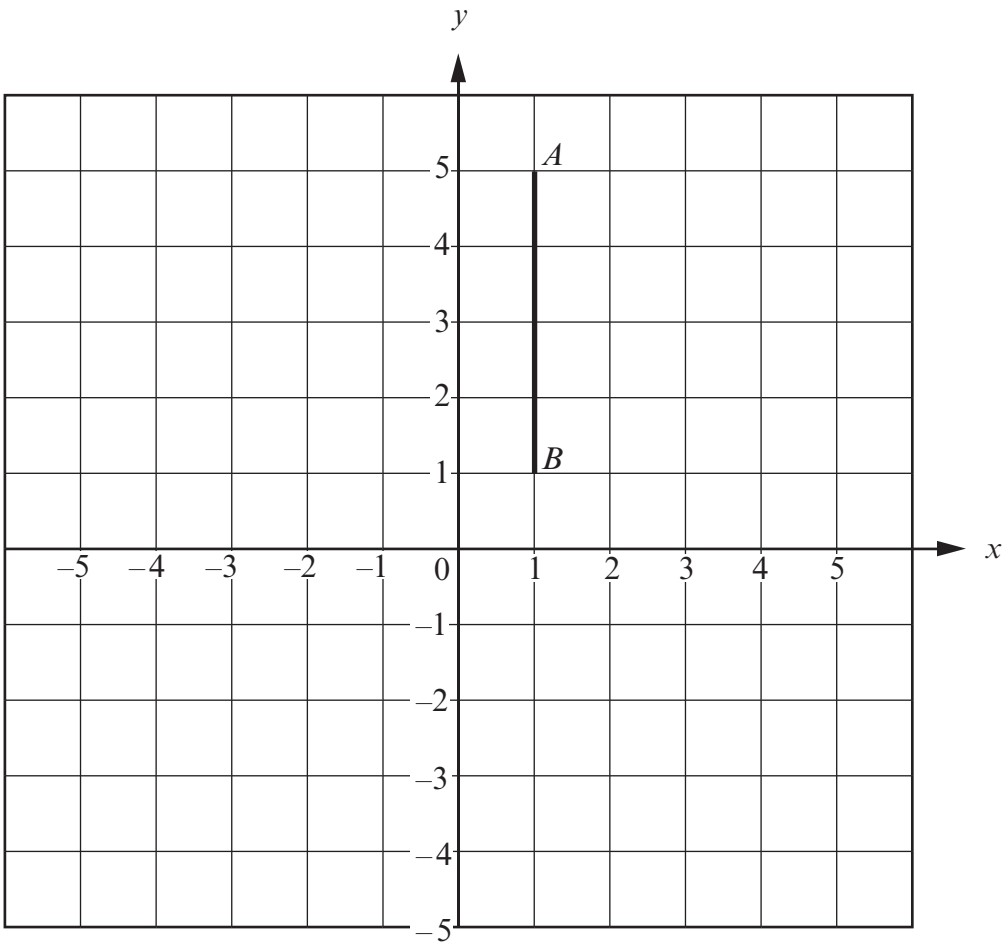
.....

[2]

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9. AB is one of the two equal sides of a right-angled isosceles triangle ABC.
Find all possible positions for the point C and write down their coordinates.



.....

.....

.....

.....

.....

.....

[4]

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10. *(a)* Jack has x pence.
Jill has 8 pence less than Jack.
Write down, in terms of x, the number of pence that Jill has.

.....

[1]

(b) A box weighs 70 grams.
Write down, in terms of b, the weight of b boxes.

.....

[1]

(c) Find the value of $3x + 4y$ when $x = -2$ and $y = 5$.

.....

[2]

(d) Simplify $4c - 5d + 3c + 2d$.

.....

.....

.....

.....

.....

[2]

(e) Expand $2(x + 3)$.

.....

.....

[1]

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11. *(a)* Calculate the size of the angle marked x.

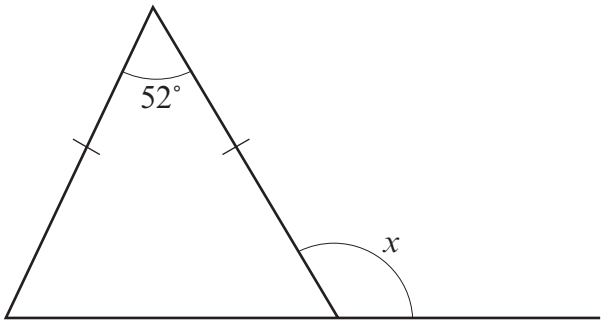


Diagram not drawn to scale

.....

.....

.....

.....

$x =$ ..... °

[3]

(b) Calculate the size of the angle marked y.

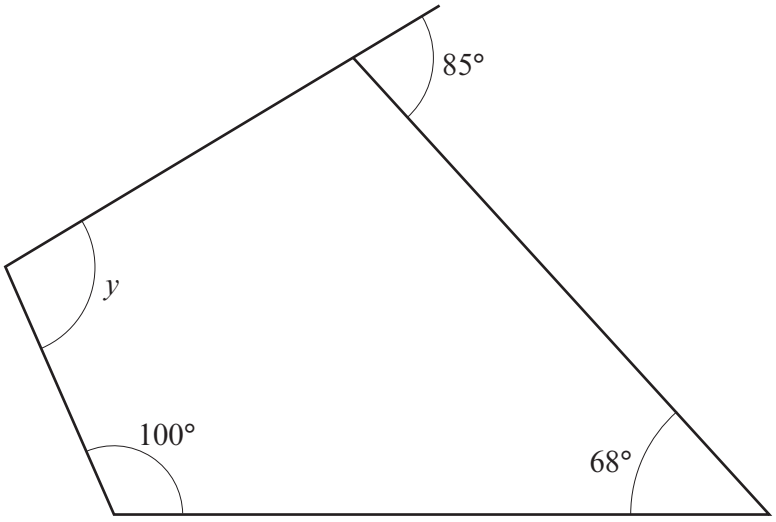


Diagram not drawn to scale

.....

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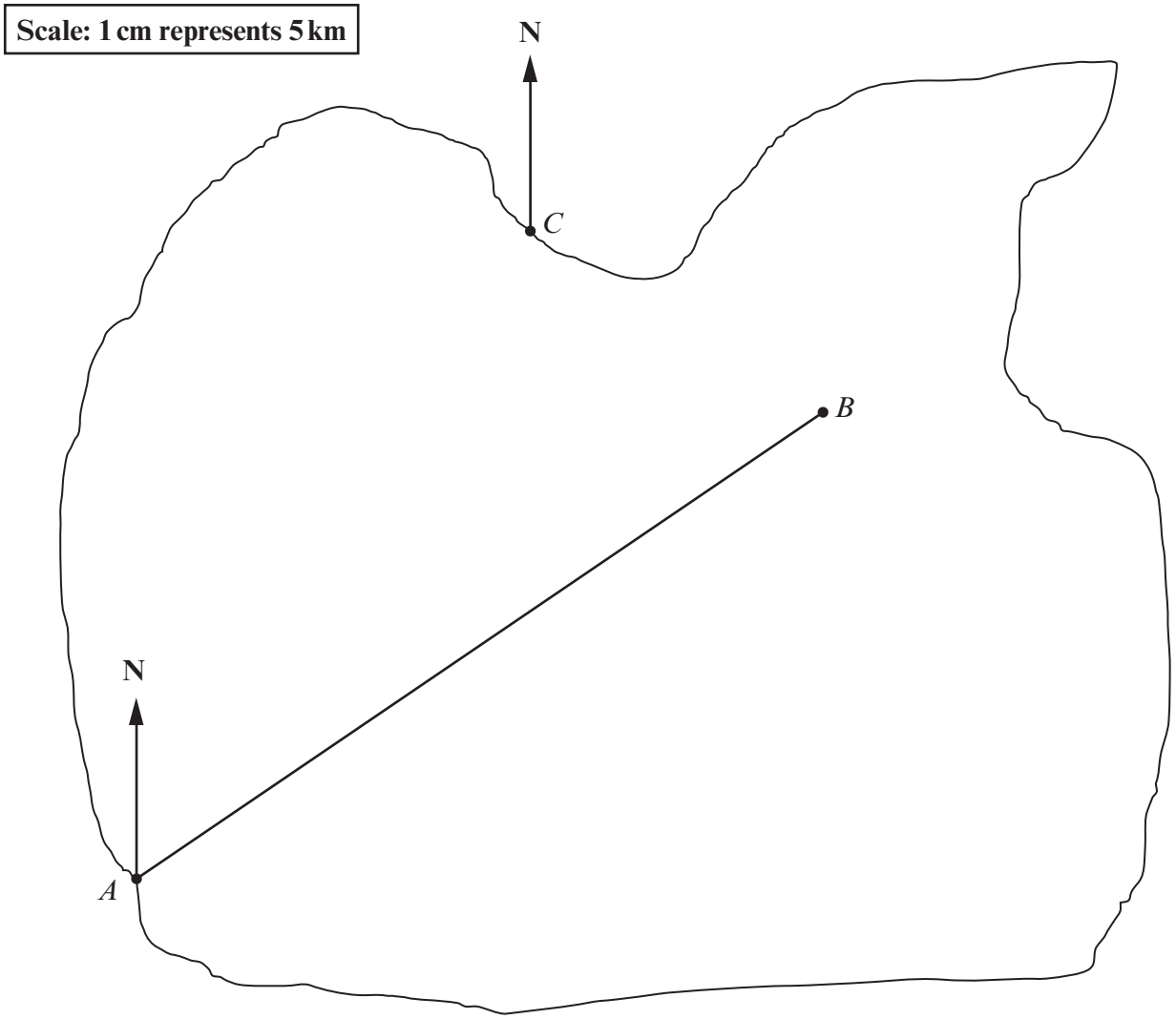
$y =$ ..... °

[3]

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12.



(a) The diagram represents a map drawn to a scale of 1 cm to represent 5 km.
Measure the length of AB and calculate the distance AB in kilometres.

AB = ... cm

.....

.....

AB = ... km
[3]

(b) The point D is at a distance of 45 km from the point C on a bearing of 136°.
Plot the point D on the above map.

.....

.....
[2]

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13. For each of the following statements, circle whether it is true or false, and give a full explanation for your choice.

(a) If you halve a whole number ending in a 6 you will always get a number ending in a 3.

true / false

.....

.....

[2]

(b) All whole numbers ending in 3 are prime numbers.

true / false

.....

.....

[2]

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14. Tomas has one spin of the circular spinner shown below.
Two of the lines shown on the diagram are diameters of the circle.

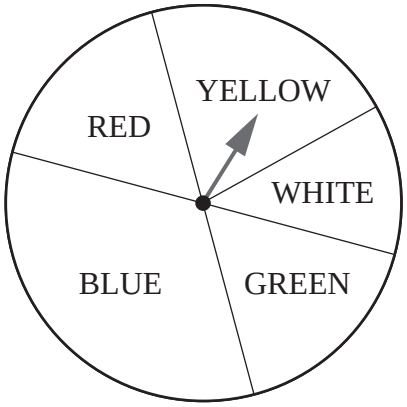


Diagram not drawn to scale

(a) The table below shows the probabilities of Tomas obtaining YELLOW, WHITE and GREEN with one spin of the spinner.
Complete the table.

Colour	YELLOW	WHITE	GREEN	RED	BLUE
Probability	0·2	0·12	0·18		

.....

.....

[3]

(b) Find the probability of obtaining either WHITE or GREEN on the spinner.

.....

.....

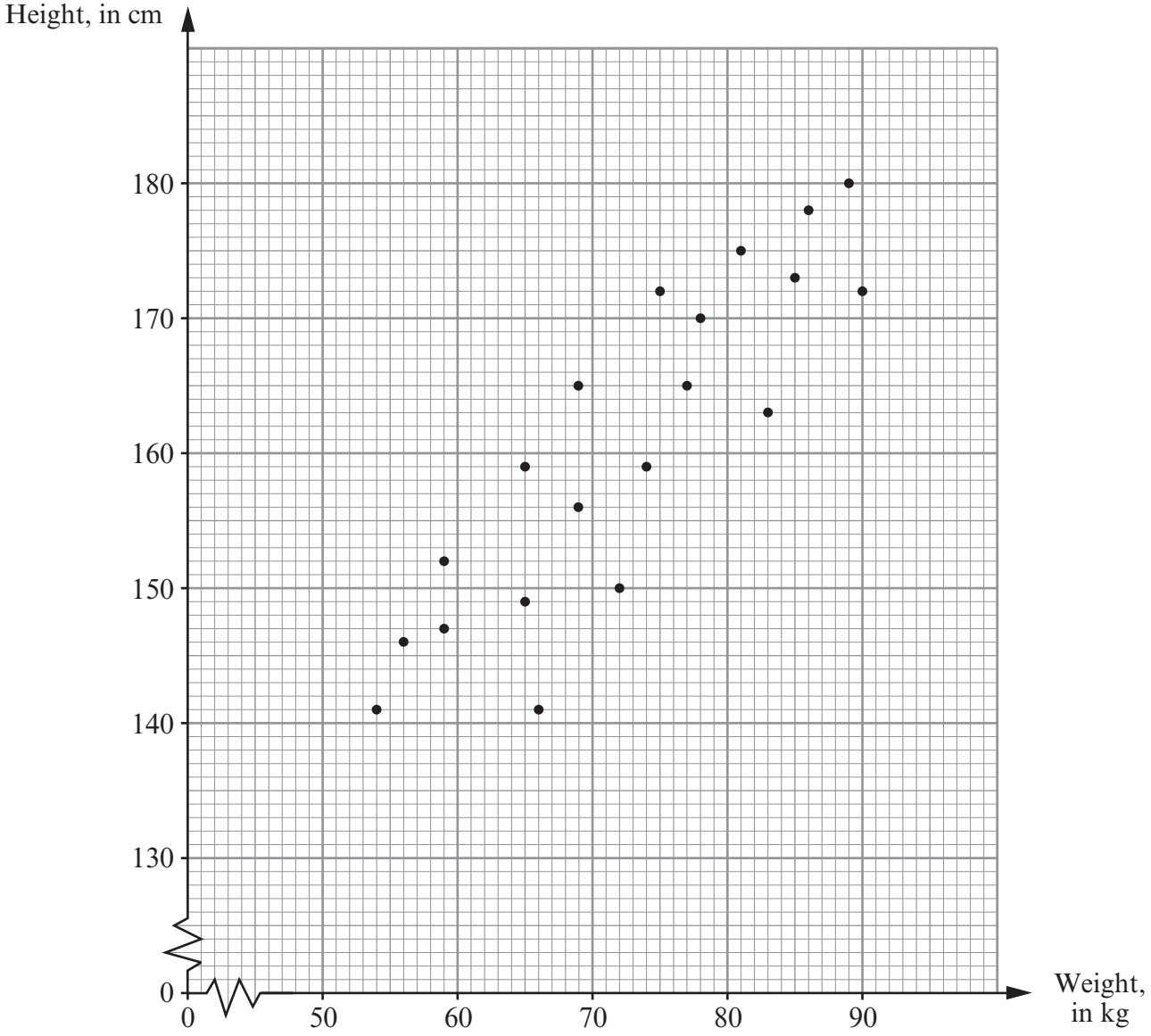
.....

[2]

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15. The scatter diagram shows the height, in cm, and the weight, in kg, for each of 20 members of a sports club.



(a) Write down the height and weight of the **heaviest** of the 20 members of the sports club.

Weight ..... kg

Height ..... cm
[2]

(b) Write down the type of correlation shown by the scatter diagram.

.....
[1]

(c) Draw, by eye, a line of best fit on the scatter diagram.
[1]

(d) Estimate the weight of a person of height 155 cm.

.....
[1]

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(e) Is it possible to estimate the weight of a person with a height of 210 cm from the scatter diagram?
You must give a reason for your answer.

.....

.....

.....

.....

[1]

16. *(a)* Cheryl scored 60 marks out of 80 in a test.
Express Cheryl's score as a percentage.

.....

.....

.....

[2]

(b) Share £300 in the ratio 5 : 7.

.....

.....

.....

.....

[3]

(c) Calculate 75% of £562.80.

.....

.....

.....

.....

.....

.....

[2]

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17. *(a)* Write down the nth term of the sequence 6, 10, 14, 18, 22, ...

.....

.....

.....

[2]

(b) Solve $3x + 4 = 8 - 7x$.

.....

.....

.....

.....

.....

[2]

18. *(a)* Explain how you know that 24 is **not** a square number.

.....

.....

.....

.....

[1]

(b) Express 112 as a product of prime numbers in index form.

.....

.....

.....

.....

.....

.....

.....

.....

.....

[3]

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GCSE MARKING SCHEME

MATHEMATICS - TWO TIER LEGACY

NOVEMBER 2011

INTRODUCTION

The marking schemes which follow were those used by WJEC for the November 2011 examination in GCSE MATHEMATICS - TWO TIER LEGACY. They were finalised after detailed discussion at examiners' conferences by all the examiners involved in the assessment. The conferences were held shortly after the papers were taken so that reference could be made to the full range of candidates' responses, with photocopied scripts forming the basis of discussion. The aim of the conferences was to ensure that the marking schemes were interpreted and applied in the same way by all examiners.

It is hoped that this information will be of assistance to centres but it is recognised at the same time that, without the benefit of participation in the examiners' conferences, teachers may have different views on certain matters of detail or interpretation.

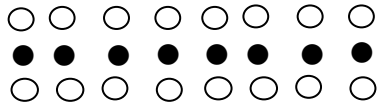
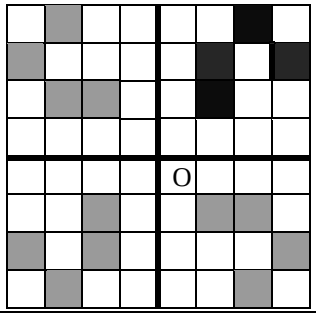
WJEC regrets that it cannot enter into any discussion or correspondence about these marking schemes.

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Mathematics Paper 1 - Foundation Tier	1
Mathematics Paper 2 - Foundation Tier	4
Mathematics Paper 1 - Higher Tier	7
Mathematics Paper 2 - Higher Tier	9

PAPER 1 – FOUNDATION TIER

2011 Autumn Paper 1 (Non calculator) Foundation Tier	Marks	FINAL POST CONFERENCE MARK SCHEME Comments (14/11/2011) (Page 1)	
1. (a) (i) 23062	B1	C.A.O.	
(ii) eighty five thousand (one) hundred (and) five	B1	C.A.O.	
(b) (i) 23, 47	B1	C.A.O.	
(ii) 88, 46	B1	C.A.O.	
(iii) 49	B1	Accept 7×7 OR 7^2	
(c) (i) 5630	B1	C.A.O.	
(ii) 5600	B1	C.A.O.	
(d) 1, 3, 5, 15	B2	B1 for any 2 or 3 factors and no incorrect numbers. OR the 4 correct factors and 1 incorrect number.	
(e) (i) 9832	B1	C.A.O.	
(ii) 2398	B1	C.A.O.	
	11		
2. (a) 9 12 11 7 1	B2	B1 for any three correct (tallies and) frequencies.	**Frequencies take precedence over tallies If freq. score 0 then all correct tallies score B1**
(Total =) 40	B1	F.T. their frequencies. If frequencies get 0	
(b) E	B1	F.T. their table of frequencies B0 for 12, but E and 12 is B1	
(c) A, E, N, S, T along one axis	B1	OR indicated on the bars themselves	
Uniform scale for the frequency axis starting at 0 (No numbers interpreted as 1-12 in ones)	B1	F.T. their table of frequencies. Use of any other scale must be clearly indicated on graph	
Five bars at correct heights	B2	B1 for at least 3 correct bars on F.T. Bars can be of varying width	
	8	**B1 for 5 correct bars with frequency polygon**	
3. (a) cuboid	B1	C.A.O.	
trapezium	B1	**Line to parallelogram gets B0**	
pentagon	B1	C.A.O.	
equilateral triangle	B1	C.A.O.	
(b) parallel line	B1	Clear intent to be parallel.	
	B1		
(c) Lines	B1	F.T. the ends of their lines	
Curve	7		
4. (a) (i) 40	B1	C.A.O.	
(ii) 58	B1	C.A.O.	
(b) ·75	B1	C.A.O.	
·76	B1	C.A.O.	
·72 $\frac{3}{4}$ 76%	B1	Or equivalent. Correct answer OR F.T. their values.	
	5		
5. (a) 11×5	M1		
$= 55$	A1	C.A.O. Candidates who get 55 then multiply by 2 etc get M0, A0.	
cm^2	U1	Independent of other marks	
(b) 32 (cm)	B1	C.A.O.	
	4		

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2011 Autumn Paper 1 (Non calculator) Foundation Tier	Marks	FINAL POST CONFERENCE MARK SCHEME Comments (14/11/2011) (Page 2)
6. (a) 	B1	C.A.O.
(b) 8 10 16 20	B1 B1	C.A.O. C.A.O.
(c) (i) 90 (ii) 100	B1 B1 5	C.A.O. C.A.O.
7. All 3 quadrants correct. 	B3 3	B1 for each correct quadrant.
8. (a) 36 × 48 288 1440 1728 = 1728 (bottles)	M1 A1 A1	Any correct complete method for the multiplication of 36 by 48 For either 288 or 1440 C.A.O. Place value errors get M0, A0, A0
(b) e.g. 1% = 3 AND 8% = 3 × 8 24	M1 A1 5	Any valid method M1 for $\frac{8}{100} \times 300$ OR $\frac{2400}{100}$ SC1 for (un)supported 24**% OR (0).24** **M1, A0 if they go on to 300±24** **£24 gets M1, A1**
9. (5, 1) (5, 5) (−3, 1) (−3, 5) Procedure for marking Q9 1. Mark any writen coords. up to 8 independent ones as B1 if correct, −1 if incorrect down to 0. 2. If the mark is 4 or 3 then STOP at that point. 3. If the mark is 2 award an extra B1 if all 4 correct points are plotted unambiguously. 4. If the mark is 1 or 0 then use the SCs in the right hand column of this Mark Scheme.	B1 B1 B1 B1 4	Reversed coordinates get 0 each time. **Penalise -1 once only for incorrect coordinate notation e.g. (x5,y1).** **SC2 for ONLY all the 4 correct points on the diagram OR SC1 for any 2 correct points (out of a maximum of 4 points) on diagram.**
10. (a) x – 8 (p) I.S.W. (b) 70b (g) I.S.W. (c) 14 (d) 7c – 3d (e) 2x + 6 **I.S.W**	 B1 B1 B2 B2 B1 7	Ignore x= OR =x OR y= etc . Ignore use of capital letter but use of a different letter is penalised −1 once only. C.A.O. Allow 70 × b OR b × 70 OR b70. **70+b=70b gets B0** B1 for either –6 OR 20 B1 for either 7c OR – 3d in an expression of the form ac±bd B1 for 7c + – 3d C.A.O.

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2011 Autumn Paper 1 (Non calculator) Foundation Tier	Marks	FINAL POST CONFERENCE MARK SCHEME Comments (14/11/2011) (Page 3)
11.		Look at their diagram also
(a) (180 – 52) / 2	M1	
= 64 (°)	A1	C.A.O.
(x=) 116 (°)	B1	F.T. 180 – 'their 64', **but F.T. 52 only if it is shown to be the right hand 'base' angle in the triangle.**
(b) Internal angle = 95	B1	C.A.O.
(y =) 360 – 100 – 68 – 95	M1	F.T. 'their 95'
= 97 (°)	A1	**Watch for 180+85−100−68 which is correct for the M1**
	6	**B1M0A0 for y = 95 only seen**
12. (a) AB = 11·5 cm	B1	Allow ±2mm. **That is, allow 11·3 to 11·7.**
AB (in km) = 11·5 × 5	M1	F.T. their AB
= 57·5 (km)	A1	
		Use overlay
(b) Bearing	B1	Allow ±2°
Distance	B1	Allow ±2mm
	5	
13. (a) False (indicated or implied) AND a counter-example, e.g. halving 16 ends up as 8	B2	B1 for an explanation that is on the correct lines, but has an error, e,g**. '36 divides into 2 to make 18' or '36 ÷ 2 = 17'**
(b) False (indicated or implied) AND a counter-example, e.g. 33 is not prime	B2	B1 for an explanation that is on the correct lines, but has an error.
	4	
14.(a) Strategy, e.g. knowing that the probabilities add to 1, or that RED with BLUE is 0.5, or Green the same as Red	M1	Also for their P(Red) + their P(Blue) = 0.5 Either correct response implies M1 also.
RED 0.18	A1	**C.A.O.**
BLUE 0.32	A1	**C.A.O.**
(b) 0.12 + 0.18	M1	
0.3(0) or 30%	A1	
H1	5	
15.(a) 90 (kg), 172 (cm)	B2	B1 for either or if reversed
(b) Positive	B1	Do not accept a description
(c) Suitable line, with some points above and below	B1	No requirement to pass through the means
(d) Answers in the range >60 (kg) but ≤ 70 (kg)	B1	OR Suitable answer from their line of best fit
(e) No, with a suitable reason	B1	No maybe implied in their statement
e.g. No as there is no data around 210cm, or "graph doesn't go that high"		**Allow descriptions of the scale to go up to 200.**
H2	6	
16.(a) 60/80 × 100	M1	
75(%)	A1	Allow SC1 for 75/100
(b) 300/12 × 5 OR 300/12 × 7	M1	**Allow for 300/'their 5+7' × 5 OR × 7**
(£)125	A1	**C.A.O.**
(£) 175	A1	**C.A.O.**
(c) 75/100 × 562.80 OR ¾ × 562.80 OR 281.4(0) + 140.7(0)	M1	OR equivalent
(£)422.1(0)	A1	
H5	7	
17.(a) $4n + 2$	B2	B1 for 4n **4+n = 4n gets B0**
(b) $3x + 7x = 8 - 4$	B1	FT until 2nd error
$x = 4/10$ (or equivalent) **ISW.**	B1	Accept x = -4/-10
H6	4	
18.(a) E.g. $2^3 \times 3$ not even powers	E1	**Accept 'no number times itself gives 24' only with 4×4**
OR 'No WHOLE number multiplied by itself gives 24 OR $2\sqrt{6}$ is not a whole number.		**and 5×5 given. Accept 4×4=16 and 5×5=25.**
		Do not accept '16, 25' only.
		Do not accept "not even powers" without $2^3 \times 3$
(b) Method that produces at least 2 correct prime factors	M1	Before 2nd error Ignore 1s seen
Sight of correct factors (2, 2, 2, 2, 7)	A1	FT their factors (with at least one index >1 used). Do not
$2^4 \times 7$	B1	ignore 1s.
H7	4	

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Surname	Centre Number	Candidate Number
Other Names		0

WJEC CBAC

GCSE

185/07

MATHEMATICS

FOUNDATION TIER

PAPER 1

P.M. MONDAY, 6 June 2011

2 hours

CALCULATORS ARE NOT TO BE USED FOR THIS PAPER

INSTRUCTIONS TO CANDIDATES

Use black ink or black ball-point pen. Do not use gel pen. Do not use correction fluid.

Write your name, centre number and candidate number in the spaces at the top of this page.

Answer **all** the questions in the spaces provided.

Take π as 3·14.

INFORMATION FOR CANDIDATES

You should give details of your method of solution when appropriate.

Unless stated, diagrams are not drawn to scale.

Scale drawing solutions will not be acceptable where you are asked to calculate.

The number of marks is given in brackets at the end of each question or part-question.

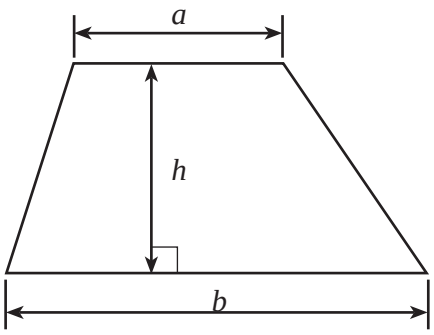
For Examiner's use only		
Question	**Maximum Mark**	**Mark Awarded**
1	6	
2	10	
3	4	
4	8	
5	6	
6	6	
7	5	
8	4	
9	8	
10	3	
11	8	
12	5	
13	7	
14	7	
15	6	
16	7	
TOTAL MARK		

0185 070001

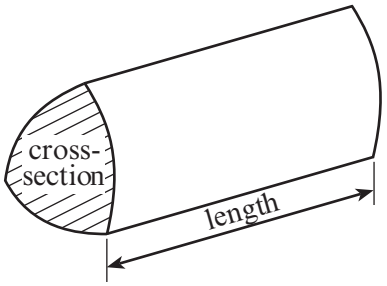
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Formula List

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



Volume of prism = area of cross-section × length



Examiner only

1. *(a)* (i) Complete the following cheque by writing the amount in words on the lines provided.

Eagle Bank Date 3rd June 2011

Pay A Smith

£ 4056

Signed

(ii) Complete the following cheque by writing the amount in figures on the line provided.

Eagle Bank Date 3rd June 2011

Pay A Smith

Fifteen thousand four hundred and seven

pounds only

£

Signed

[2]

(b) Using only numbers between 20 and 30, write down

(i) a multiple of 8,

.....

(ii) a square number.

.....

[2]

(c) Write 9374

(i) correct to the nearest 10,

.....

(ii) correct to the nearest 100.

.....

[2]

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Examiner only

2. *(a)* Write down the value of the 4 in the number 74152.

.....

[1]

(b) Find the sum of the numbers 429 and 336.

.....

.....

.....

[1]

(c) Find the difference between the numbers 579 and 267.

.....

.....

.....

[1]

(d) Write down all the factors of 18.

.....

[2]

(e) John has a £10 note.
Loaves of bread cost £1.50 each.
He buys as many loaves of bread as he can.
How much money will he have left over?

.....

.....

.....

.....

[3]

(f) **Showing all your working**, find an **estimate** for the value of 49·8 × 9.

.....

.....

.....

[2]

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3.



The formula for the cost of buying a computer on credit is

cost = monthly payment x 20 + deposit

(a) Find the **cost** of a computer, when the **monthly payment** is £18 and the **deposit** is £50.

.....

.....

.....

.....

[2]

(b) The **cost** of another computer is £520.
Find the **monthly payment** when the **deposit** is £60.

.....

.....

.....

.....

[2]

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4. The number of pupils in Year 11 in each of four different schools is shown in the following table:

School	A	B	C	D
Number of pupils in Year 11	80	140	110	130

(a) Draw a pictogram to represent the above information, using ⊕ to represent 40 pupils.

School A	
School B	
School C	
School D	

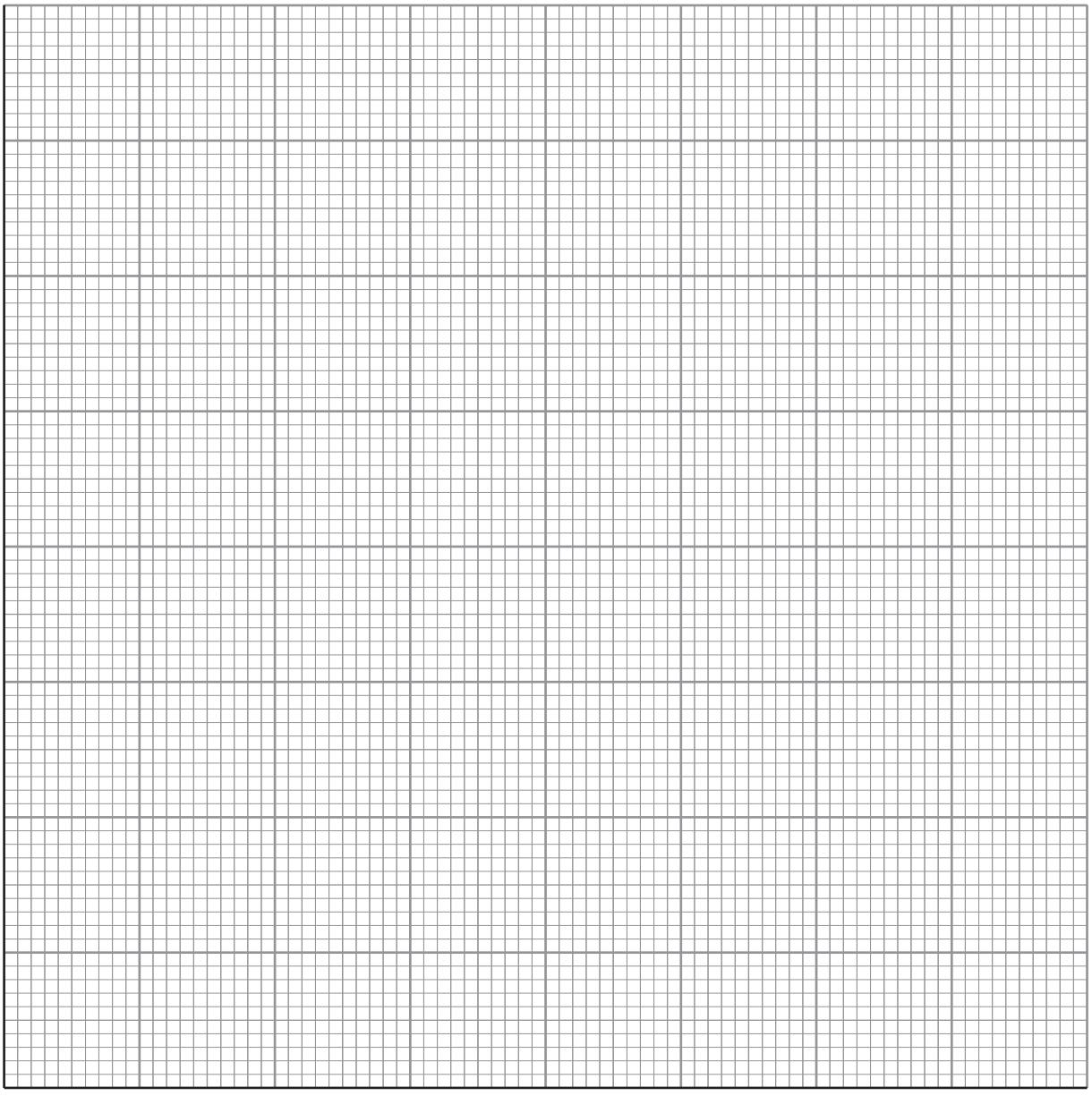
[4]

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Examiner only

(b) On the graph paper below, draw a bar chart to represent the information.

[4]



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5. *(a)* Janet thinks of a number.
She divides her number by 6 and adds 10.
The answer she gets is 14.
What number did Janet think of?

.....

.....

.....

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[2]

(b) Solve $y - 6 = 8$.

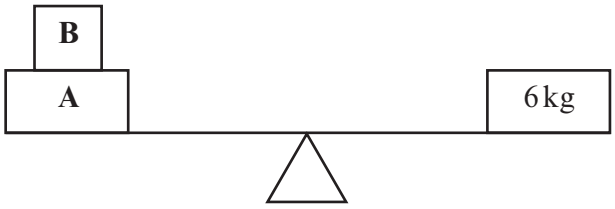
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[1]

(c)



The packages **A** and **B** together weigh 6 kg.
Package **A** is twice as heavy as package **B**.
Find the weight of package **A** and find the weight of package **B**.

.....

.....

.....

.....

Weight of package **A** = ... kg Weight of package **B** = ... kg

[3]

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6. Two rectangles, each 12 cm by 4 cm, are placed so as to make a symmetrical cross as shown in the diagram.

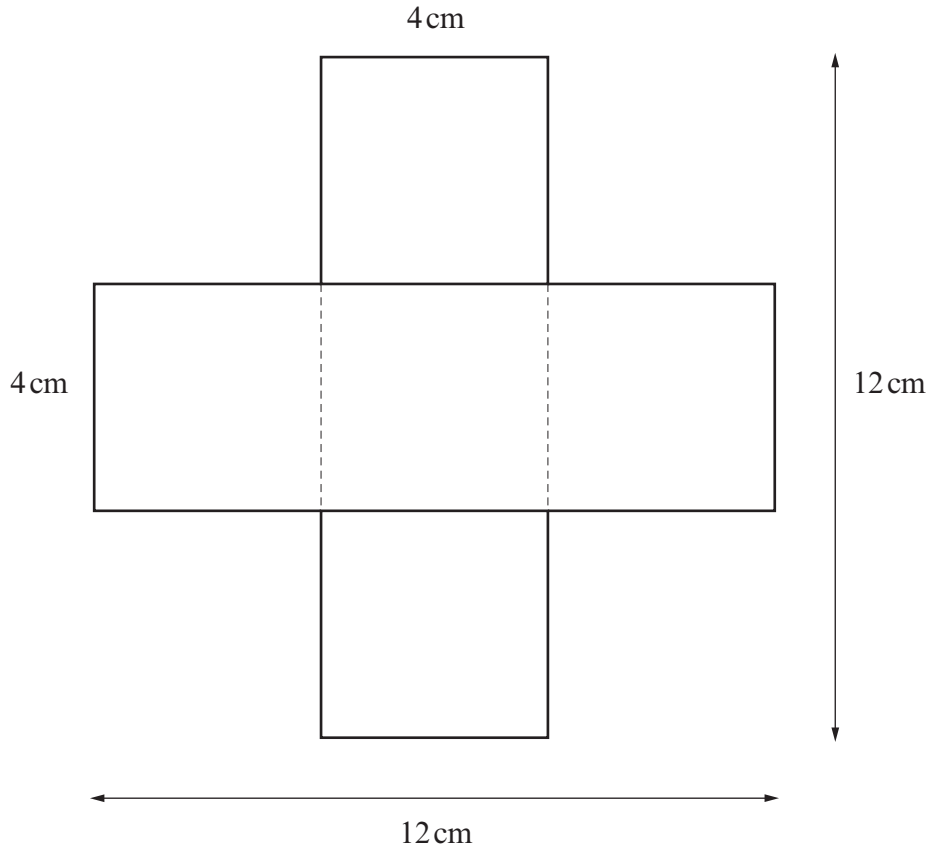


Diagram not drawn to scale

(a) Calculate the perimeter of the cross.

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[3]

(b) Calculate the area of the cross.
Write down the units of your answer.

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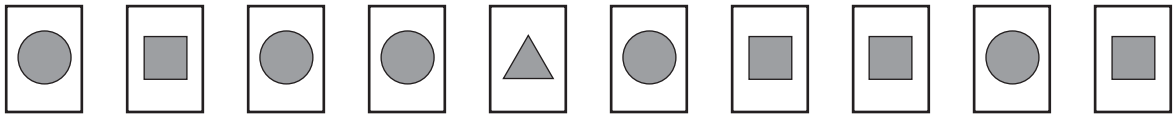
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[3]

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7. *(a)*

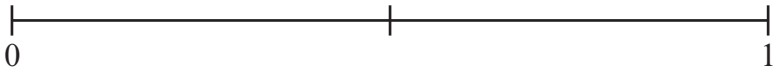


Chris picks one card at random from the ten cards shown above.
On the probability scale shown below, mark the points **A**, **B** and **C** where:

A is the probability that Chris picks a card with  on it.

B is the probability that Chris picks a card with  on it.

C is the probability that Chris picks a card with  on it.



[3]

(b) In a meeting, there are 3 teachers, 12 male pupils and 9 female pupils.
All are equally likely to be chosen as chairperson.
What is the probability that the person chosen as chairperson is a female pupil?

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[2]

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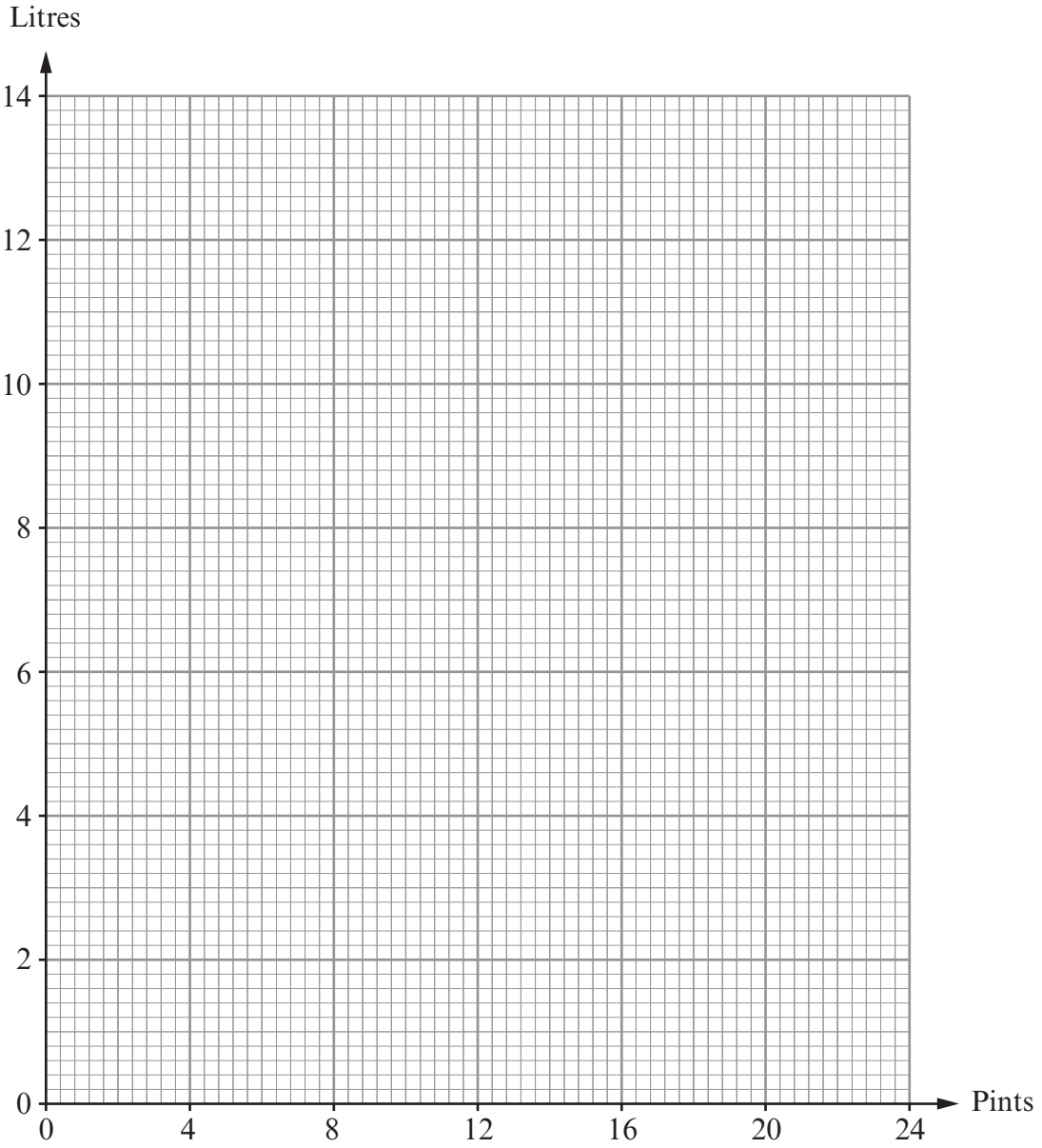
Examiner only

8. *(a)* The volume of liquid in a container can be measured in pints or in litres.
The table shows the number of pints and the number of litres for each of three volumes.

Pints	7	14	21
Litres	4	8	12

Use the data in the table to draw a conversion graph between pints and litres.

[2]



(b) Find an estimate for 45 litres in pints.

.....

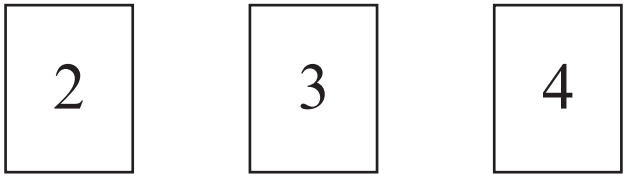
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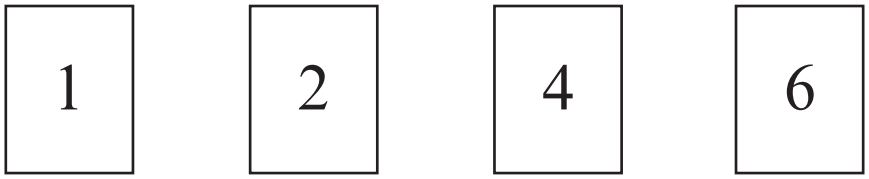
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9. There are two packs of cards. One pack is coloured red and the other pack is coloured yellow. The red pack has three cards numbered



The yellow pack has four cards numbered



In a game, a player chooses one card at random from the red pack and one card at random from the yellow pack. The player's score is the product of the two numbers.

For example, if the number on the red card is 3 and the number on the yellow card is 2, the player works out $3 \times 2 = 6$ and the player scores 6.

(a) Complete the following table to show all the possible scores.

Yellow pack			
6	.....	.....	.....
4	.....	.....	.....
2	4	6	8
1	2	3	4
	2	3	4
	Red pack		

[2]

(b) A player wins a prize by getting a score of 4 or less.

What is the probability of a player winning a prize?

.....

.....

[2]

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(c) 180 people each play the game once.
Approximately how many would you expect to win a prize?

.....

.....

[2]

(d) It costs 50p to play the game once. The prize for getting a score of 4 or less is £1.
If each of the 180 people play the game once, approximately how much profit do you expect the game to make?

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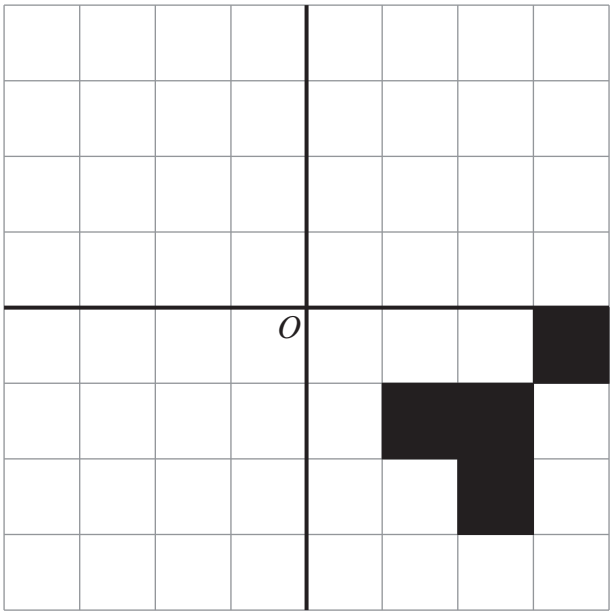
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[2]

10. Draw three shapes like the given one, so that the completed pattern has rotational symmetry of order 4 about O.

[3]



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11. *(a)* Calculate $\frac{3}{8}$ of 56.

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.....

.....

[2]

(b) Find the value of

(i) 4·5 – 1·27,

.....

.....

.....

(ii) 0·2 × 0·3,

.....

(iii) $\frac{7}{10} - \frac{2}{5}$.

.....

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.....

[4]

(c) Write down the following numbers correct to 2 significant figures.

(i) 7348

.....

(ii) 0·00652

.....

[2]

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12. In the diagram below $ABCD$ is a square, the triangle BDE is isosceles with $DE = DB$, and the triangle BEF is equilateral.

Calculate the size of $D\hat{E}F$.

[5]

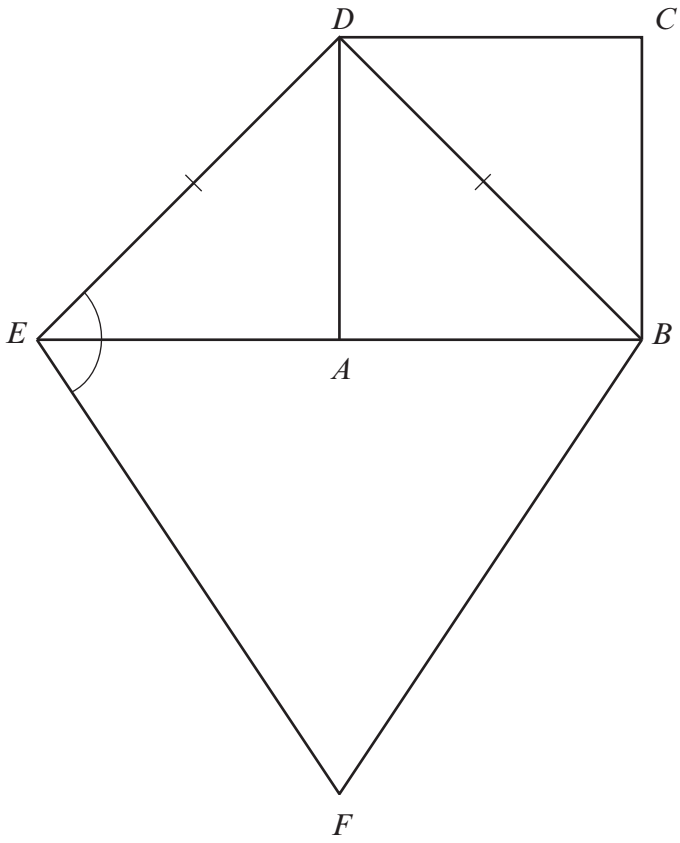


Diagram not drawn to scale

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13. *(a)* Estimate the value of $\frac{207 \times 148}{49}$.

.....

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[2]

(b) Given that $47 \times 235 = 11045$, write down the value of $\frac{1104{\cdot}5}{0{\cdot}47}$.

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[1]

(c) In a quiz, a team scores 13 out of 20. Express this as a percentage.

.....

.....

[1]

(d) Which of the following fractions is closest to $\frac{2}{5}$?

$\frac{7}{20}$ $\frac{1}{4}$ $\frac{7}{15}$

Show all your working.

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[3]

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14. *(a)* Calculate the size of each of the angles marked x, y and z in the diagram below.

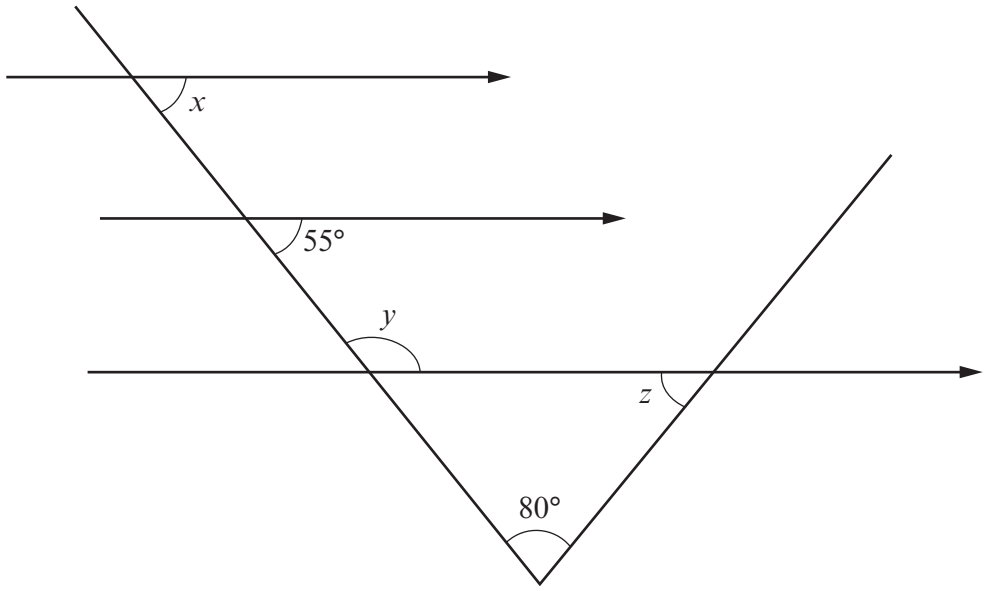


Diagram not drawn to scale

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$x =$ ..... ° $y =$ ..... ° $z =$ ..... °

[4]

(b) Calculate the size of each of the exterior angles of a regular pentagon.

.....

.....

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.....

.....

[3]

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15. The table shows some of the values of $y = x^3 - 8$ for values of x from –2 to 4.

(a) Complete the table by finding the values of y for $x = -1$ and $x = 3$.

x	–2	–1	0	1	2	3	4
$y = x^3 - 8$	–16		–8	–7	0		56

.....

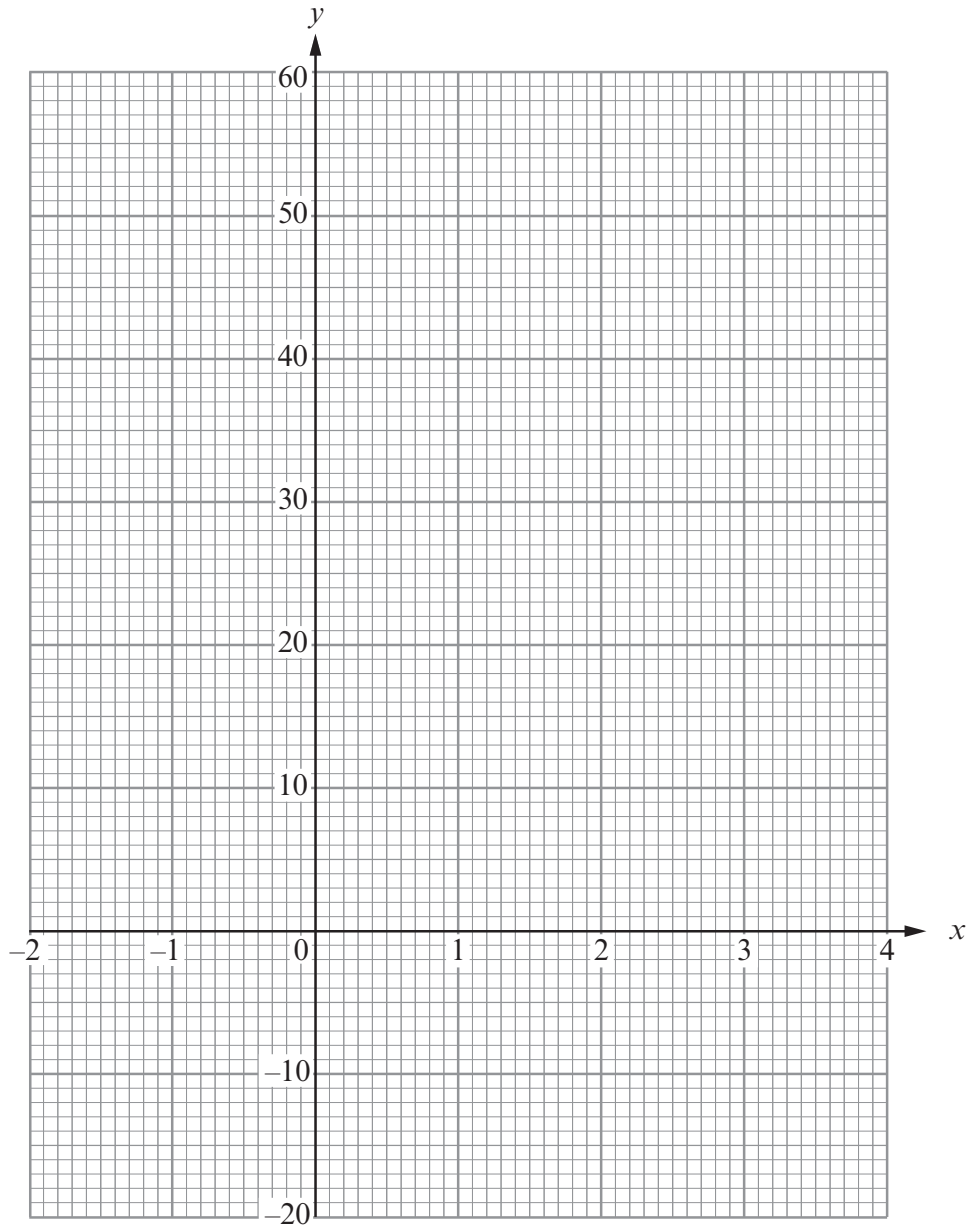
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[2]

(b) On the graph paper below, draw the graph of $y = x^3 - 8$ for values of x from –2 to 4.

[2]



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(c) Use your graph to solve the equation $x^3 - 8 = 40$.

.....

.....

[2]

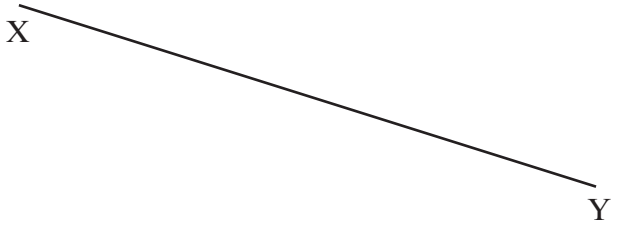
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16. *(a)* Shade the region that satisfies both of the following conditions.

(i) The points are less than 5 cm from X.
(ii) The points are nearer to Y than to X.

[3]



(b)

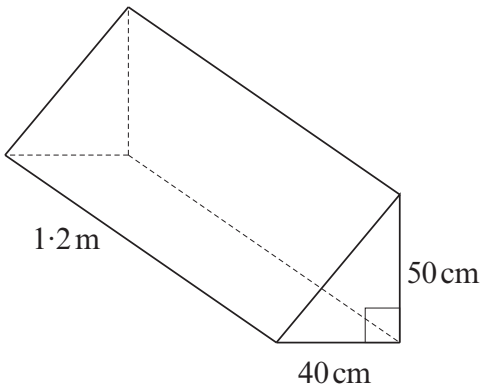


Diagram not drawn to scale

Calculate the volume of the triangular prism, giving your answer in cm^3.

.....

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.....

.....

[4]

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