WJEC GCSE MATHEMATICS (LINEAR)

MATHS



EXAM QUESTION PACK

PAPER 2 FOUNDATION TIER 0185 PAPERS

STEMUP

These questions belong to WJEC, not to us.

The examination questions, mark schemes and examiner reports in this pack were written and published by WJEC. They are past assessment materials, reproduced here so that students can revise from them.

What we do not own

STEMUP is not affiliated with WJEC and does not own, and makes no claim to own, any of the question, mark scheme or examiner report material in this pack. WJEC has not endorsed, approved or been involved in the production of it. WJEC and the qualification titles used here belong to their respective owners and appear for identification only.

Where to find the originals

WJEC publishes its past papers, mark schemes and examiner reports free of charge. Always check the current specification at wjec.co.uk before you revise, because content and wording can change between series.

If you hold the rights to any material in this pack and would like it amended or removed, contact admin@stemup.co.uk and we will act on it.

Surname	Centre Number	Candidate Number
Other Names		0

GCSE

185/08

MATHEMATICS
FOUNDATION TIER
PAPER 2

A.M. THURSDAY, 17 November 2011

2 hours

For Examiner's use only		
Question	**Maximum Mark**	**Mark Awarded**
1	**6**	
2	**4**	
3	**4**	
4	**4**	
5	**7**	
6	**4**	
7	**4**	
8	**4**	
9	**6**	
10	**4**	
11	**3**	
12	**6**	
13	**8**	
14	**4**	
15	**4**	
16	**6**	
17	**5**	
18	**6**	
19	**6**	
20	**5**	
TOTAL MARK		

0185 080001

ADDITIONAL MATERIALS

A calculator will be required 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 or use the π button on your calculator.

INFORMATION FOR CANDIDATES

You should give details of your method of solution especially when a calculator is used.

Unless stated, diagrams are not drawn to scale.

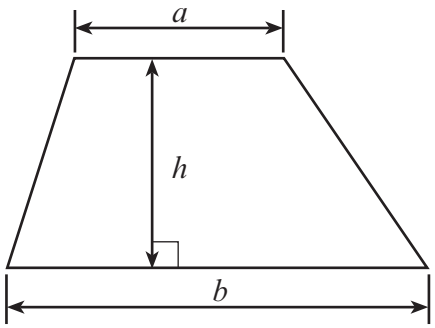
Scale drawing solutions will not be acceptable where you are asked to calculate.

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

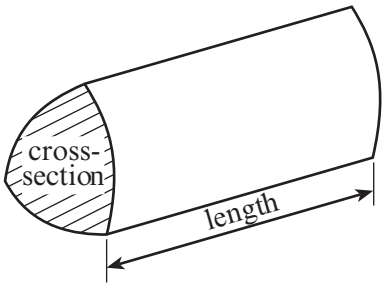
STEMUP.CO.UK

Formula List

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



Volume of prism = area of cross-section × length



STEMUP.CO.UK

Examiner only

1. *(a)* Simon goes shopping.
Complete the following table to show his shopping bill.

Item	Cost
15" television	£ 120.38
6 pairs of socks @ £1.84 per pair	£
3 sweaters @ £8.46 each	£
5 packets of tissues @ 76p per packet	£
Total	£

[4]

(b) The shop gives a discount of 5%.
How much discount does Simon get?

.....

.....

[2]

0185 080003

2. Write down the metric unit **best** used to measure

the distance from Milan to Venice, ...

the weight of a person, ...

the volume of a bucket, ...

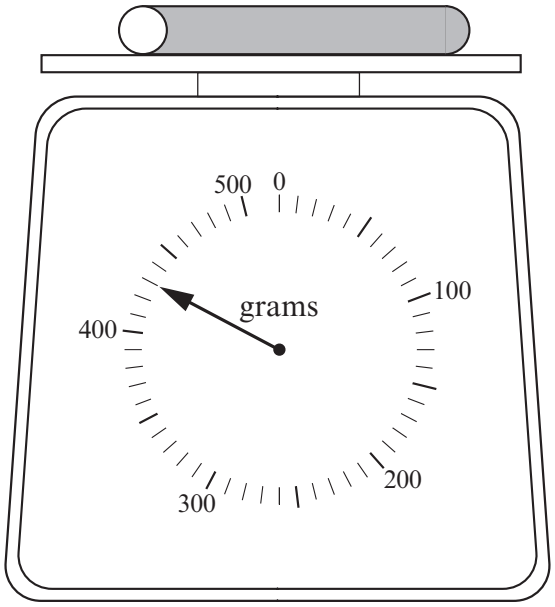
the length of a classroom. .....

[4]

STEMUP.CO.UK

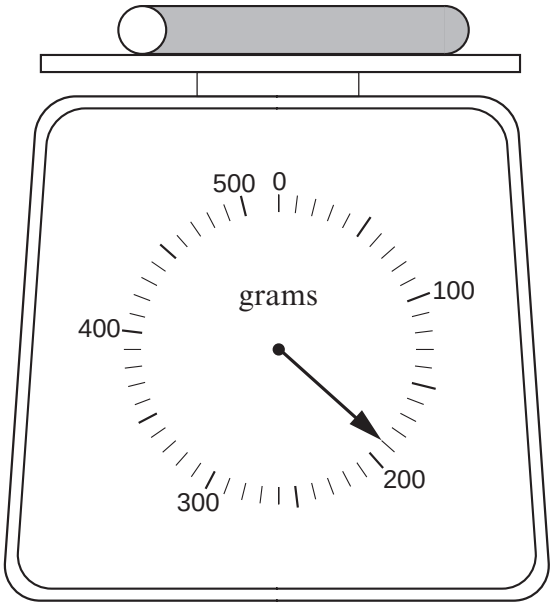
Examiner only

3. Katherine wants to find the weight of a small sweet.
A tube with 40 of the sweets is put on the scale.



Weight of the tube with sweets = ... g

She pours out the sweets and weighs the empty tube.



Weight of the empty tube = ... g

Find the weight of **one** small sweet.

.....

.....

.....

.....

[4]

STEMUP.CO.UK

Examiner only

4. A person's weekly wage is worked out using the formula

Wage = Number of hours of overtime × £15 + Basic pay

(a) Find a person's **Wage** when the **Number of hours of overtime** is 7 and the **Basic pay** is £150.

.....

.....

.....

.....

[2]

(b) Find the **Number of hours of overtime**, when the **Wage** is £270 and the **Basic pay** is £180.

.....

.....

.....

.....

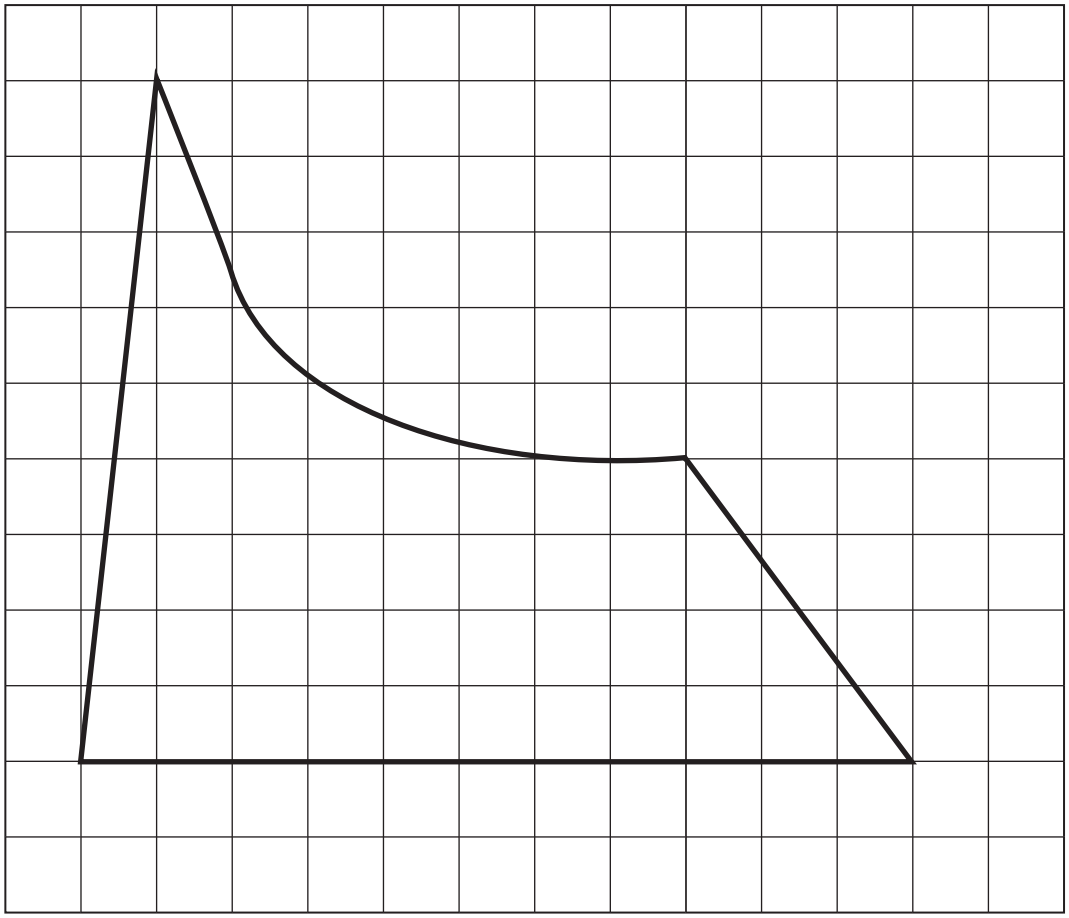
[2]

0185 080005

STEMUP.CO.UK

Examiner only

5. *(a)*



The above shape, drawn on a square grid, represents a garden. By counting squares, estimate the area of the garden when **every square represents an area of 5 m^2**.

.....

.....

.....

.....

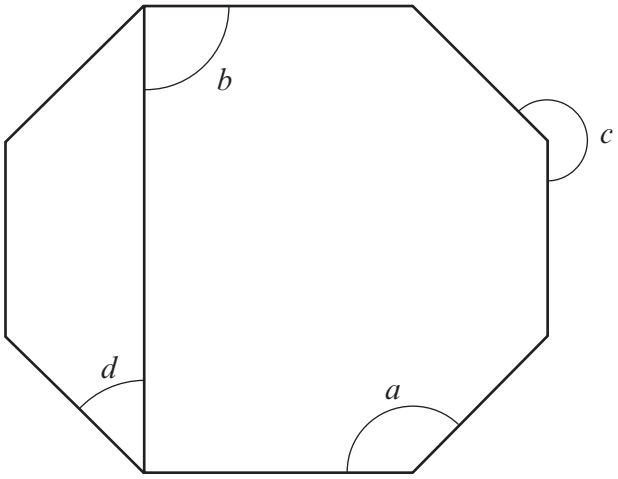
Area = ... m^2

[3]

STEMUP.CO.UK

Examiner only

(b)



Look at the angles marked *a, b, c* and *d*.
Write the letter of the angle alongside its special name.

acute angle .....

reflex angle .....

right angle .....

obtuse angle .....

[4]

0185 080007

STEMUP.CO.UK

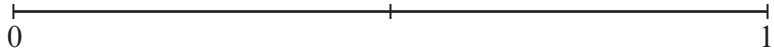
Examiner only

6. *(a)* On the probability scale shown below, mark the points **A**, **B** and **C** where:

A is the probability of there being snow at the North Pole in December.

B is the probability of it raining for 3 consecutive days, in August 2012, in the Sahara desert.

C is the probability of the score being an odd number when a fair dice is thrown.



[3]

(b) A school runs a raffle and one hundred and sixty five pupils buy a ticket.
Melanie says that it is equally likely that the winner will be a boy or a girl.
Is she correct? You must give a reason for your choice.

.....

.....

.....

[1]

STEMUP.CO.UK

Examiner only

7. The gas meter readings at the beginning and the end of a period were:





The cost of the gas is 12p for each unit.
There is also a fixed charge of £22.25.
Calculate the cost of the gas.

.....

.....

.....

.....

.....

.....

.....

.....

[4]

0185 080009

STEMUP.CO.UK

Examiner only

8. *(a)* Complete an accurate drawing of triangle ABC in which $AB = 9{\cdot}5\,\text{cm}$, $AC = 12{\cdot}6\,\text{cm}$ and angle $BAC = 54°$.
The side AB has been drawn for you.

[3]



(b) Measure $B\hat{C}A$.

$B\hat{C}A =$ ..... °

[1]

STEMUP.CO.UK

Examiner only

9. The height, in centimetres, of some pupils are:

137 120 181 175 141 118 151 153

(a) Find the mean height of the pupils.

.....

.....

.....

.....

[3]

(b) Find the median height of the pupils.

.....

.....

.....

.....

[2]

(c) Find the range of the heights of the pupils.

.....

.....

.....

.....

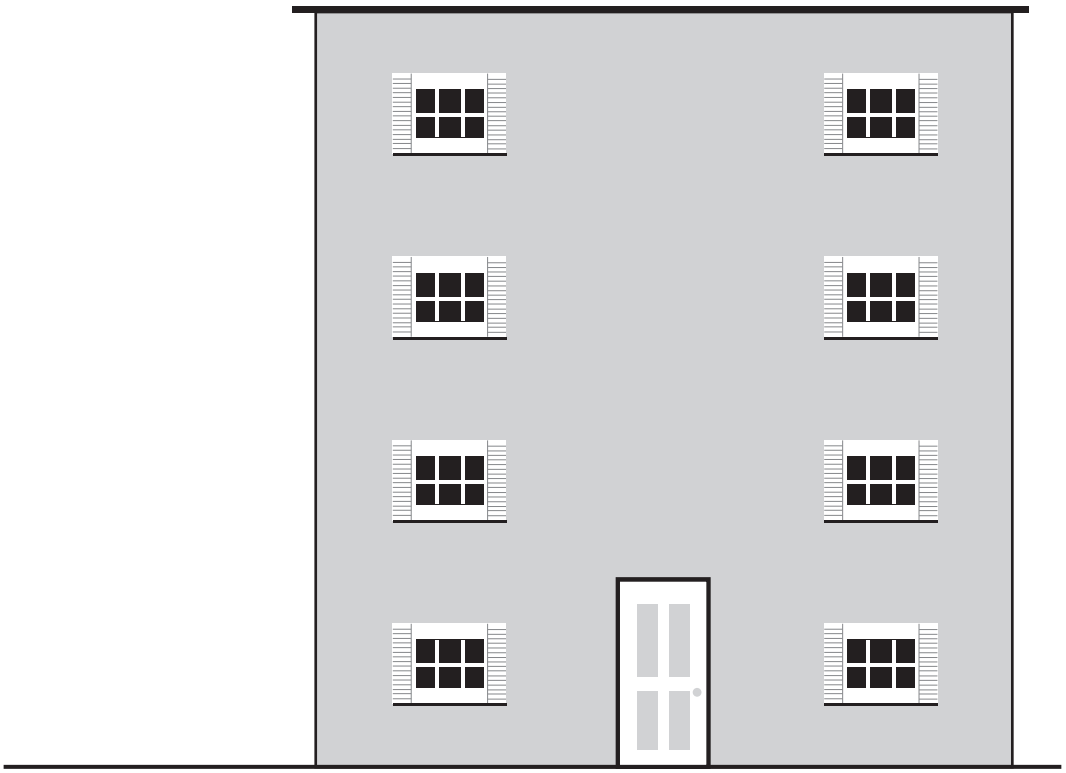
[1]

0185 080011

STEMUP.CO.UK

Examiner only

10.



The above picture shows a building.

Write down an **estimate** for the **actual height** of the door. .....

Using this estimate for the height of the door, estimate the **actual height** of the building.

You must show all your working.

.....

.....

.....

.....

.....

.....

.....

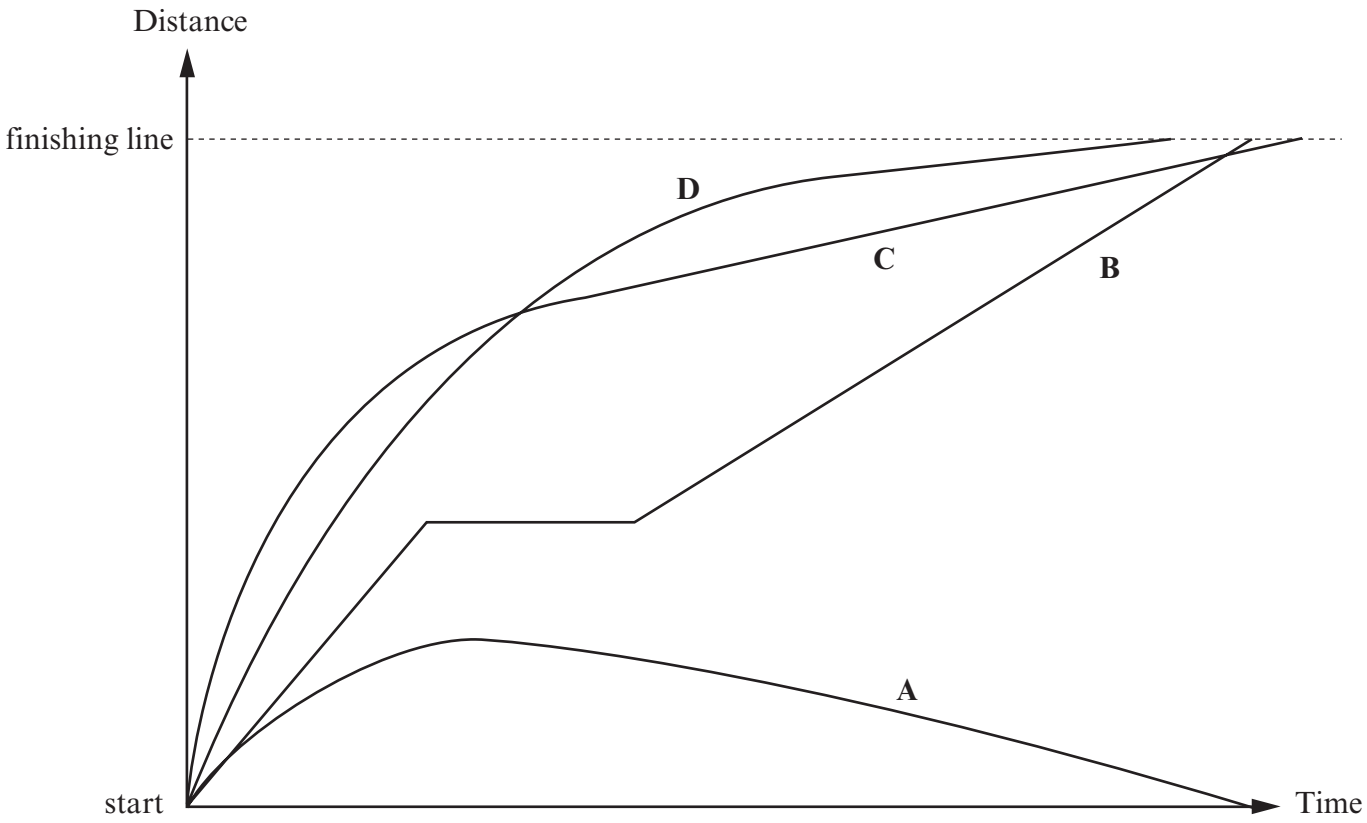
.....

[4]

STEMUP.CO.UK

Examiner only

11. Four pupils ran a race. The diagram shows their travel graphs.



(a) Who won the race? ..... [1]

(b) Who was in the lead in the very early part of the race? ..... [1]

(c) Describe **A**'s race.

.....

.....

.....

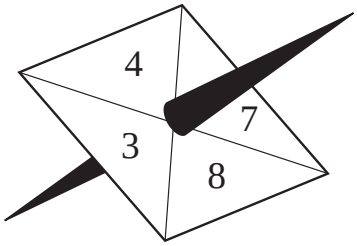
.....

[1]

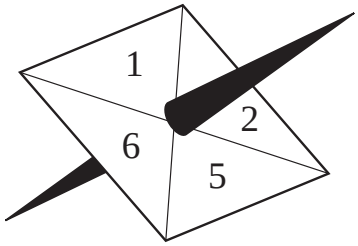
STEMUP.CO.UK

Examiner only

12. Two square shaped spinners A and B have numbers written on them.



Spinner A



Spinner B

In a game, a player spins both spinners and adds **double** the number showing on spinner A to the number showing on spinner B to get the score for the game.
For example, if the number on spinner A is 4 and the number on spinner B is 5, the player works out $2 \times 4 + 5 = 13$ and the player scores 13.

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

Spinner B \ Spinner A	3	4	7	8
6	.....	.....	.....	.....
5	.....	.....	.....	.....
2	8	10	16	18
1	7	9	15	17

[2]

(b) What is the probability that a player scores less than 10?

.....

[2]

(c) A player wins a prize by getting a score of less than 10.
Eighty people play the game once.
How many will be expected to win a prize?

.....

.....

.....

.....

[2]

STEMUP.CO.UK

Examiner only

13. *(a)* Simplify $5p + p - 4p$.

.....

[1]

(b) Solve each of the following equations.

(i) $\frac{x}{5} = 15$

.....

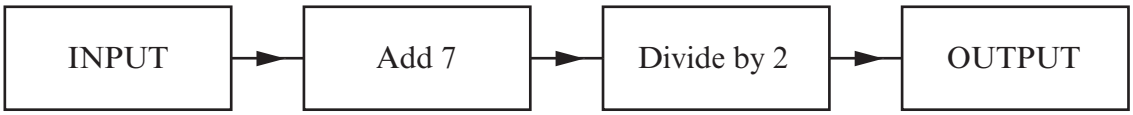
(ii) $3y + 11 = 17$

.....

.....

[3]

(c) What is the output from the following machine when the input is –3?



.....

.....

[1]

(d) Use the formula $W = 2L + 3M$ to find M when $W = 35$ and $L = 4$.

.....

.....

.....

.....

[3]

STEMUP.CO.UK

Examiner only

14. A group of 24 adults and 25 children go to a concert.
The total cost of tickets was £488.80.
A child's ticket cost £7.60.
Find the cost of a ticket for an adult.

.....

.....

.....

.....

.....

.....

[4]

15. The number of goals scored in 40 matches were noted.
The results are summarised in the following table.

Number of goals	0	1	2	3	4
Number of matches	10	19	6	4	1

(a) What is the probability that in a randomly chosen match from this group at least 2 goals were scored?

.....

.....

[2]

(b) How many goals were scored altogether?

.....

.....

.....

.....

.....

[2]

STEMUP.CO.UK

Examiner only

16. *(a)*



Tumble Drier

In store price £269
Internet price 17% off

Calculate the internet price of this tumble drier.

.....

.....

.....

.....

.....

[3]

(b) Branka has 2 cats.

Each cat gets $\frac{1}{3}$ tin of food in the morning and $\frac{1}{3}$ tin of food in the evening.

How many tins does she need to buy for 5 days?

.....

.....

.....

.....

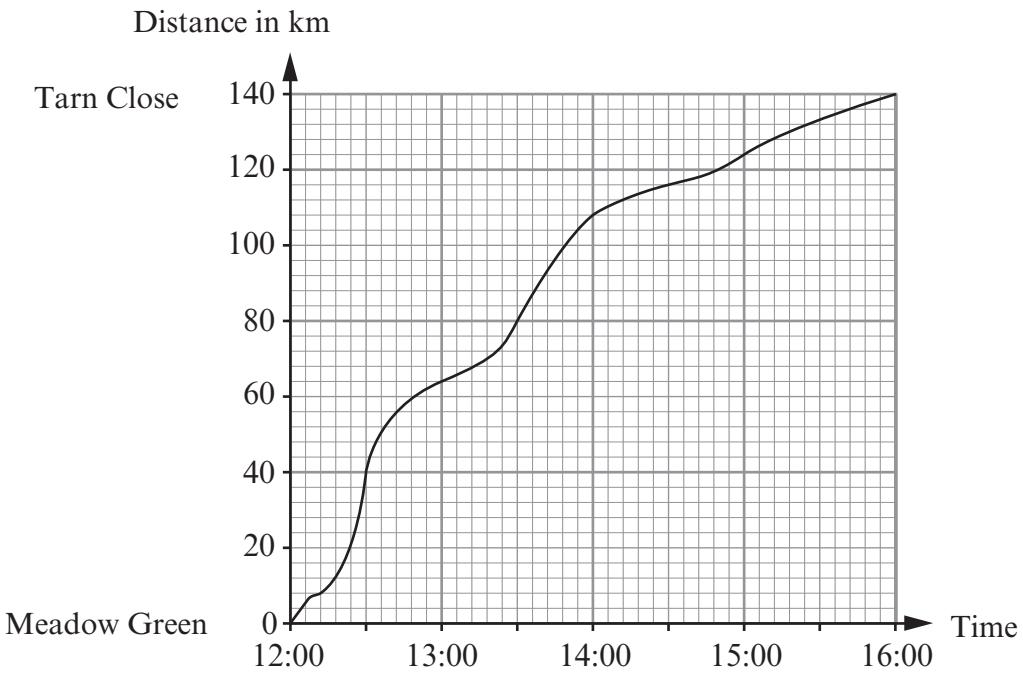
.....

[3]

STEMUP.CO.UK

Examiner only

17. The distance-time graph shows a 140 km journey from Meadow Green to Tarn Close.



(a) (i) What is the distance travelled between 13:00 and 14:30?

.....

.....

.....

.....

(ii) Find the average speed for this part of the journey.

.....

.....

.....

.....

[4]

(b) Explain how you can tell from the graph that it took less time to travel the first 70 km of the journey than it took to travel the final 70 km of the journey.

.....

.....

.....

.....

[1]

STEMUP.CO.UK

Examiner only

18. *(a)* Find $\frac{14{\cdot}5 \times 33{\cdot}4}{710{\cdot}7 - 35{\cdot}9}$ correct to two decimal places.

.....

.....

.....

.....

.....

[2]

(b) Kim bought a scooter for £1600 on 1st January 2010.
Every year the value of the scooter depreciates by 8% of its value at the start of the year.
Find the value of the scooter on 1st January 2012.

.....

.....

.....

.....

.....

.....

.....

.....

.....

[4]

STEMUP.CO.UK

Examiner only

19. The exchange rate for buying Canadian dollars ($) at an exchange bureau is $1.64 for £1.
Carys only has £700 to exchange into Canadian dollars.
The lowest Canadian dollar notes the exchange bureau has are $50 notes.

How many Canadian dollars can Carys buy and how much will this cost her?
You must give the units of your answer.

.....

.....

.....

.....

.....

.....

.....

.....

.....

[6]

STEMUP.CO.UK

Examiner only

20. *(a)*

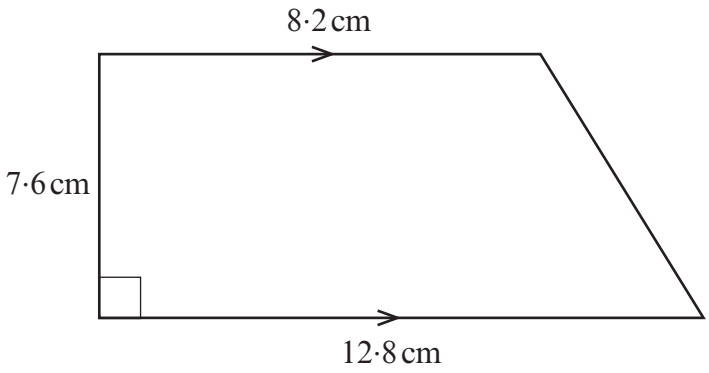


Diagram not drawn to scale

Calculate the area of the trapezium.

.....

.....

.....

.....

.....

.....

[2]

(b) Calculate the area of a semicircle with a diameter of 44·8 cm.

.....

.....

.....

.....

.....

.....

[3]

STEMUP.CO.UK

WJEC
CBAC

GCSE MARKING SCHEME

MATHEMATICS - TWO TIER LEGACY

NOVEMBER 2011

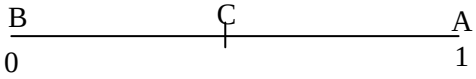
INTRODUCTION

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.

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

2011 Autumn Paper 2 (Calculator allowed) **Foundation Tier**	**Marks**	**FINAL POST CONFERENCE MARK SCHEME** **Comments (21/11/2011) (Page 1)**
1. (a) (£120.38) 11.04 25.38 3.8(0) (£) 160.6(0) **I.S.W.** (b) e.g. 10% = 16.06 5% = 16.06/2 = (£) 8.03	 B1 B1 B1 B1 M1 A1 6	 C.A.O. C.A.O. C.A.O. F.T. their figures for one error F.T. 'their 160.6' **Award M1, A1 for (£)152.57 OR 'their (£)152.57' on F.T.**
2. km kg ℓ m	B1 B1 B1 B1 4	C.A.O. C.A.O. Accept cm^3 OR cc OR ml C.A.O.
3. 430 (g) 190 (g) (430 – 190)/40 = 6 (g)	B1 B1 M1 A1 4	C.A.O. C.A.O. F.T. 'their 430 – 'their 190'
4. (a) Wage = 7 × 15 + 150 = (£) 255 ISW (b) Number of hours = (270 − 180) / 15 = 6	M1 A1 M1 A1 4	 C.A.O. Correctly substitution including the division C.A.O. Accept embedded answers such as 270 = 6×15 + 180
5. (a) Counting squares 42 – 48 210 – 240 (b) d c b a	M1 A1 B1 B4 7	 F.T. 'their 42–48'×5 **correctly calculated** B1 for each
6. (a)  (b) No – number of pupils is odd, (so not equal number of girls and boys.) OR depends on how many tickets the girls and boys bought.	B1 B1 B1 E1 4	A marked at 1. B should be almost at 0 **(0 to under the p in probabilty)** C marked at centre of the line. Along these lines **No may be implied in their explanation** **Reason overides the 'Yes' or 'No'' in the comments column**
7. Units used = 246 **OR 7792×12 − 7546×12** Cost of units = (£) 29.52 **OR 2952(p)** Total cost = (£) 51.77 **OR 5177(p)**	B1 B2 B1 4	 F.T. 'their units'. **B1 for £2952** F.T. for 'their cost of units + £22.25
8. (a) angle at A = 54º AC = 12·6 Complete triangle (b) Angle	B1 B1 B1 B1 4	± 2º ± 2mm Only if at least one B1 already awarded F.T. if completed triangle **joining BC.** **(Allow 46 – 50 in a 'good' triangle)** **Complete 'correct' triangle but reflected gets B2.**
9. (a) Sum = 1176 Mean = 1176/8 = 147 (cm) (b) 118 120 137 141 151 153 175 181 146 (c) 63 (cm)	M1 m1 A1 M1 A1 B1 6	For attempt to add the numbers **(1000 – 1350 will imply M1)** For dividing a number by 8 **(dependent on the M1)** **C.A.O.** Arranging the numbers in order **(ascending or descending)** **(Award the M1 for 7 of the numbers in correct order)** C.A.O. C.A.O.

STEMUP.CO.UK

2011 Autumn Paper 2 (Calculator allowed) Foundation Tier	Marks	FINAL POST CONFERENCE MARK SCHEME Comments (21/11/2011) (Page 2)
10. Door 6 to 8 ft OR 1·8 to 2·5 metres Door 2·5cm Building = 10cm Multiplying factor = 4 Height = door's estimate × their SF (2-6) = SC1 for answers which: (a) **give only door's height as 2.5cm and building height as 10cm** OR (b) **a proper attempt at 'dividing' the building's height into equal 'door' heights**	B1 B1 M1 A1 4	**Unsupported answers marked as follows**: feet 12 SC1 24 M1, A1 (inc) 32 SC1 48 metres 7·2 10 15 F.T. their door's height estimate AND scale factors 2 – 6 inc **Correct units for their numerical answer must be shown somewhere in their working for this A1**
11. (a) D (b) C (c) Ran a little then turned back to the start	**B1** **B1** E1 3	 Along these lines
12. (a) 12 14 20 22 11 13 19 21 (b) 3/16 ISW (c) $\frac{3}{16} \times 80$ = 15	B2 B2 M1 A1 6	C.A.O. B1 for any 4 F.T. their table in (b) and (c) B1 for a numerator of 3 in a fraction less than 1. B1 for the 16 in a fraction <1. Do not penalise incorrect reduction of fractions. F.T. 'their 3/16' if a fraction <1. **but not ½.** **If they have incorrectly reduced their answer in part (b) and use it in part (c), then it is M1, A0 in part (c).** **15/80 gets M1, A0** NOTES Penalise –1 for use of words such as "3 out of 16", "3 in 16" OR "3:16" **OR 3 over 16.** When fraction and wrong notation seen, DO NOT penalise wrong notation.
13. (a) 2p (b) (i) (x =) 75 (ii) 3y = 6 (y =) 6/3 ISW (=2) (c) 2 (d) 35 = 2×4 + 3M 3M = 27 M = 27/3 ISW (=9)	B1 B1 B1 B1 B1 B1 B1 B1 8	 Accept embedded answers such as 75/5 = 15 Accept embedded answers such as 3×2 + 11 = 17 F.T. until 2nd error. **Final B0 for 6÷3** F.T. until 2nd error. **F.T. aM=b (a≠1)** **Accept embedded answers such as 35 = 2×4 + 3×9**
14. Cost of all adult tickets = £488.8(0) – 25 × (£)7.6(0) = (£) 298.8(0) Cost per ticket = 298.8(0)/24 = (£) 12.45	M1 A1 M1 A1 4	 C.A.O. F.T. 'their 298.80' but NOT (£)488.80 **Note: Pupils who interchange the 25 and 24 should be marked as if correct then MR-1.**
15. (a) 11/40 ISW (b) (0×10) + 1×19 + 2×6 + 3×4 + 4×1 = 47	B2 M1 A1 4	C.A.O. B1 for 11/m in a fraction < 1, B1 for n/40 (if < 1) Penalise –1 for incorrect notation such as 11:40 OR 11 out of 40 etc Allow one term to be incorrect or missing. Allow M1, A0 for 47/40

STEMUP.CO.UK

2011 Autumn Paper 2 (Calculator allowed) Foundation Tier	Marks	FINAL POST CONFERENCE MARK SCHEME Comments (21/11/2011) (Page 3)
16. (a) $\frac{17}{100} \times$ (£) 269	M1	For a correct method of finding 17% and subtracting from 269
= (£) 45.73	B1	C.A.O.
Internet price = (£)223.27	A1	F.T. 'their 45.73' if M awarded
		OR
OR $\frac{83}{100} \times$ (£) 269		M1 for a correct method of finding 83%
		B1 for sight of 83
Internet price = (£)223.27		A1 C.A.O.
(b) 1/3 × 2 × 2 × 5	M1	
= 20/3	A1	
7 tins	B1	**F.T. 'their 20/3' rounded up.**
	6	
17. (a)(i) Their readings at 14:30 & 13:00 and intention to subtract	M1	116 – 64. Allow for 'their readings' with intention to subtract
= 52 (km)	A1	CAO
(ii) 52/ 1.5	M1	FT their (i) **Watch for 144/4 (= 35) which gets M0, A0**
34.666(km / h)	A1	Accept rounded or truncated. *However, do not accept an answer of 35 without working or from incorrect working SC1 for an answer of 40*
(b) Explanation, e.g. "first half journey in just over an hour", "steeper to start"	E1	**Accept, e.g. "more vertical", "line increases means it is quicker"**
H1	5	
18.(a) 0.72	B2	B1 for 0.7(17694….)
(b) Any correct 8% of a value used in workings	B1	**Could be (£)128 OR (£)256 OR 'their 117.76'**
1600 – 8% of 1600 (= 1600 – 128)	M1	OR M2 for 1600×0.92^2 (M1 for 1600× 0.92)
1472 – 8% of 1472 (= 1472 – 117.76)	m1	FT their 128
(£) 1354.24	A1	CAO. Penalise extra working -1
		Appreciate: Possible B1 and SC1 for (£)1866.24
H3ac	6	*Simple depreciate: Possible B1 and M1 (1344)*
19. 700× 1.64	M1	
= ($)1148 (Canadian dollars)	A1	
Conclusion, has to buy 1100 (Canadian dollars)	A1	FT their rounding down to nearest 50 provided M1
1100 ÷1.64	M1	FT their amount of Canadian **dollars 'if changed to a $50 amount'. Do NOT F.T. 1148 OR 'their 1148'**
= 670.73(17..)	A1	**£ must be given. Accept £670.73p**
£670.73	A1	**For example, 1148 changed to 1150 (incorrect) gets M1, A1, A0, but on F.T. 1150/1.64 gets M1, 701.21(9) gets A1 and finally £701.22 gets A1 giving 5 marks in total.**
		Accept an answer of '29.27 in credit' or similar, but an answer of 29.27 would not get the final A mark, but do award the previous M1 A1 as alternative method
H4	6	
20.(a) ½ (8.2 + 12.8) × 7.6	M1	
79.8 (cm^2)	A1	Accept 80 from working, **but unsupported 80 gets M0, A0.**
(b) ½ π ×22.4^2	M2	Allow M1 π ×22.4^2
= 787.7(6…) to **788.2(6496)**	A1	A1 1575.5.. to **1576.5…**
		SC1 for answer 3151 to **3153.05...**
H6bc	5	

STEMUP.CO.UK

Surname	Centre Number	Candidate Number
Other Names		0

GCSE

185/08

MATHEMATICS
FOUNDATION TIER
PAPER 2

A.M. FRIDAY, 10 June 2011

2 hours

For Examiner's use only		
Question	**Maximum Mark**	**Mark Awarded**
1	5	
2	4	
3	4	
4	11	
5	4	
6	4	
7	4	
8	4	
9	6	
10	4	
11	4	
12	8	
13	5	
14	7	
15	5	
16	4	
17	4	
18	6	
19	4	
20	3	
TOTAL MARK		

0185 080001

ADDITIONAL MATERIALS

A calculator will be required 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 or use the π button on your calculator.

INFORMATION FOR CANDIDATES

You should give details of your method of solution especially when a calculator is used.

Unless stated, diagrams are not drawn to scale.

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

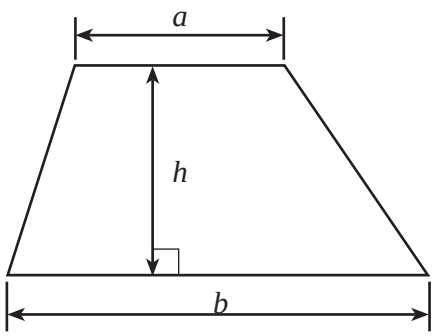
The number of marks is given in brackets at the end of each question or part-question.

JUN110185080 1

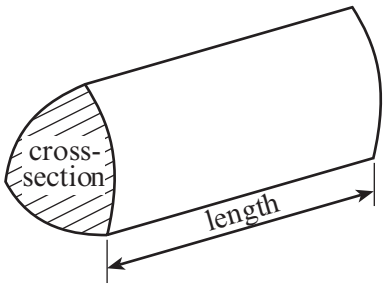
STEMUP.CO.UK

Formula List

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



Volume of prism = area of cross-section × length



STEMUP.CO.UK

Examiner only

1. *(a)* Brian orders some computer equipment and materials from an internet store. He buys a printer, 5 packets of paper, 12 ink cartridges and 6 discs. Complete the following table to show his bill for these items.

Item	Cost
1 printer	£87.34
5 packets of paper @ £5.36 per packet	
12 ink cartridges @ £2.76 each	
6 discs @ 74p each	
Total	

[4]

(b) The store gives a discount of 10%.
How much discount does Brian get?

.....

.....

[1]

2. Which metric unit is **best** used to measure

the height of a building, ...

the capacity of a bucket, ...

the distance from Dover to Calais, ...

the weight of a horse? .....

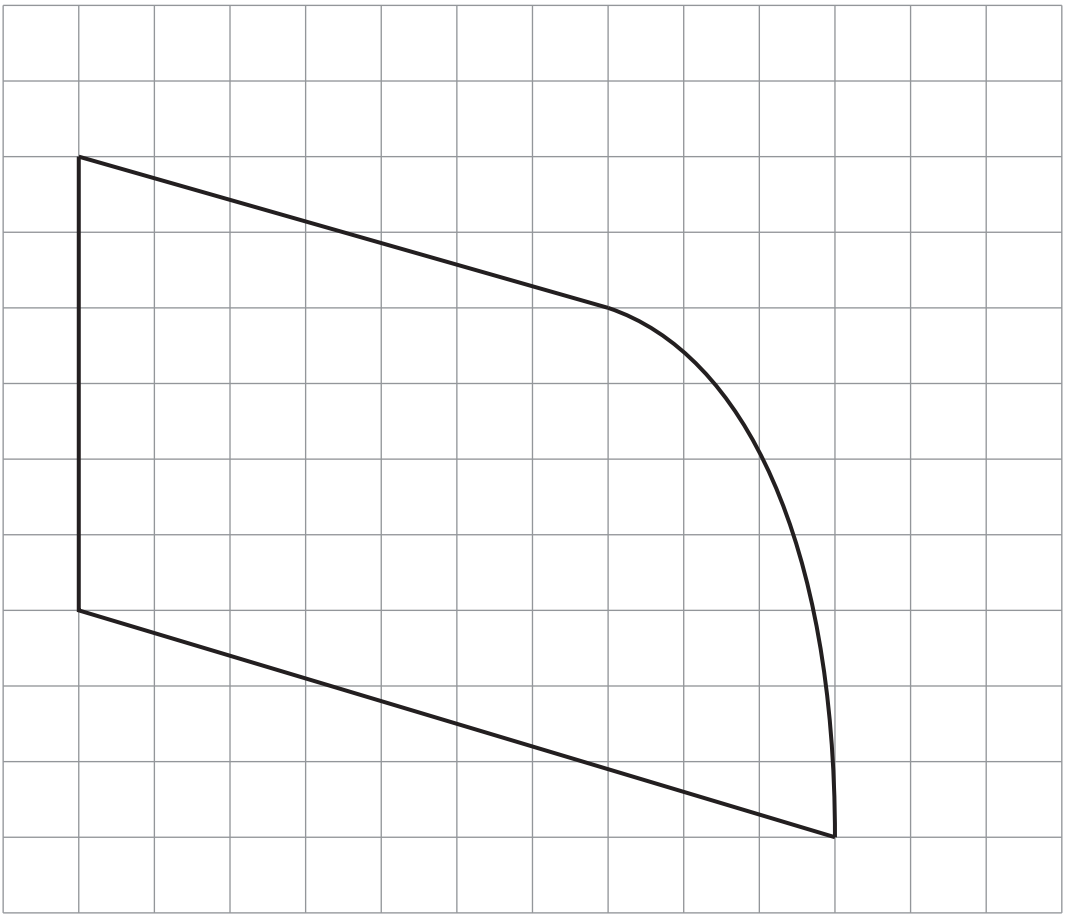
[4]

0185 080003

STEMUP.CO.UK

Examiner only

3. *(a)*



The above shape has been drawn on a centimetre square grid.
By counting squares, estimate the area of the above shape.

.....

.....

.....

.....

Area of the shape = ... cm^2

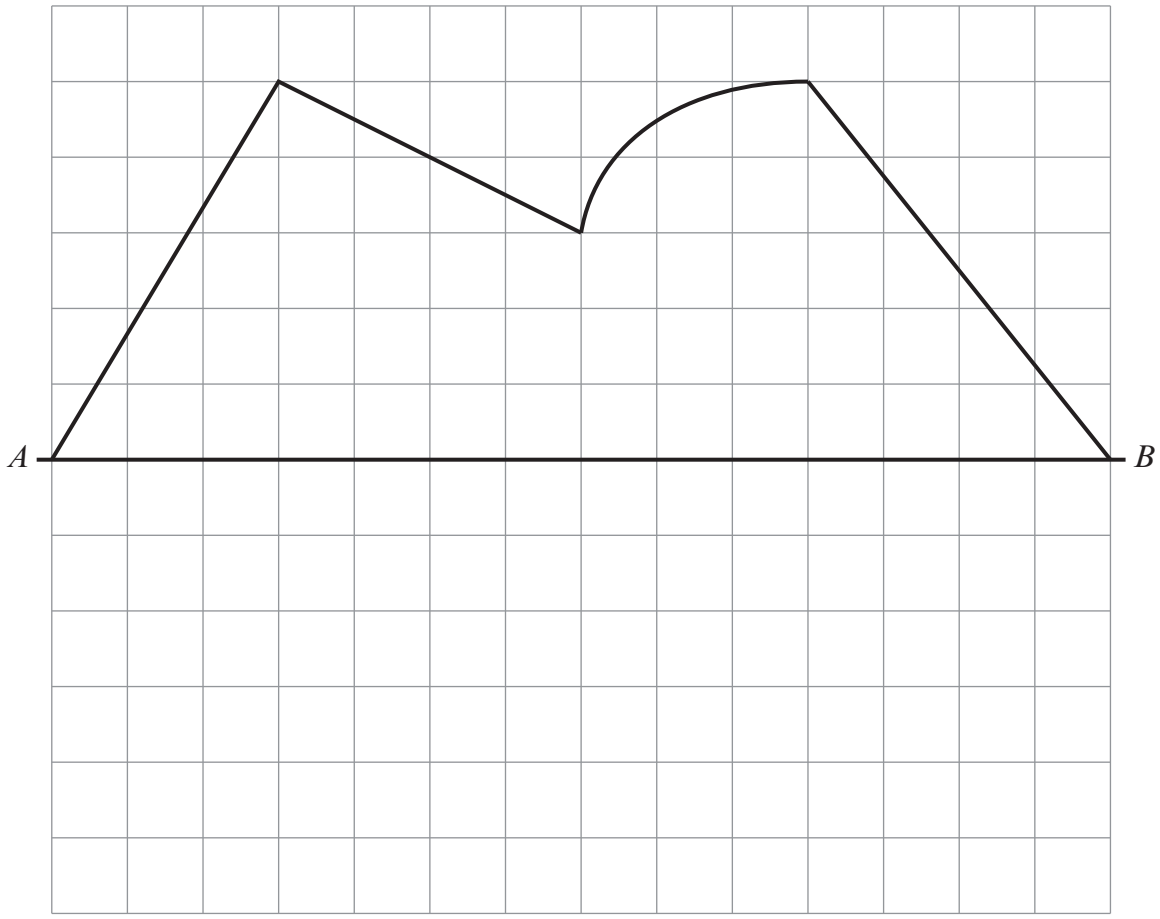
[2]

STEMUP.CO.UK

Examiner only

(b) Complete the following figure so that it is symmetrical about the line *AB*.

[2]

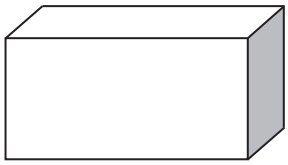
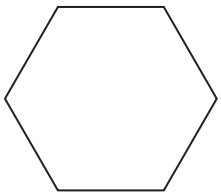
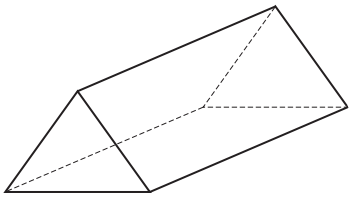
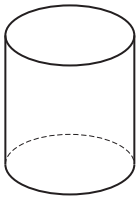


STEMUP.CO.UK

Examiner only

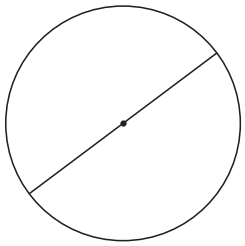
4. *(a)* Write down the names of **each** of the following figures.

[4]

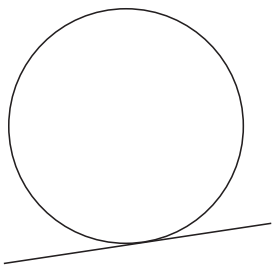
	.....
	.....
	.....
	.....

(b) Write down the special name of the straight line shown in **each** of the following diagrams.

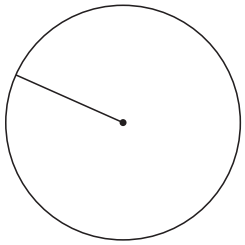
[3]



.....



.....



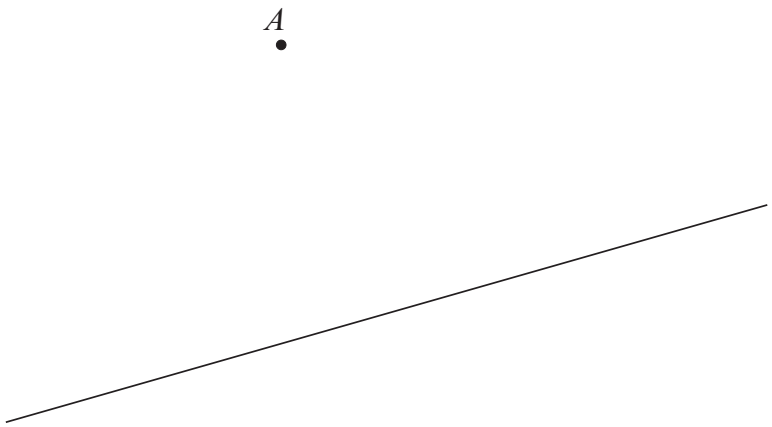
.....

STEMUP.CO.UK

Examiner only

(c) In the diagram below, draw a line through the point *A* that is perpendicular to the given line.

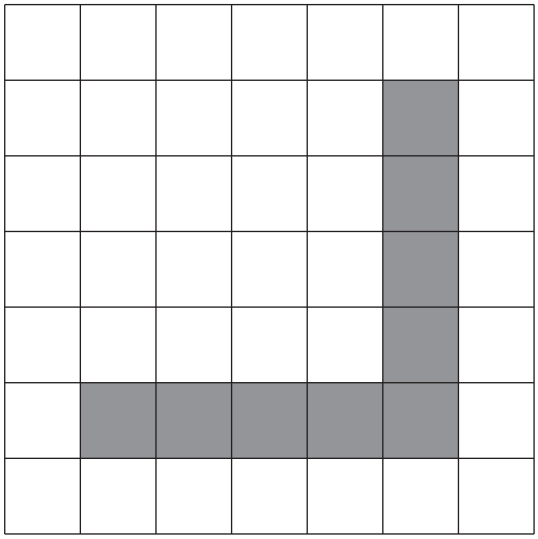
[1]



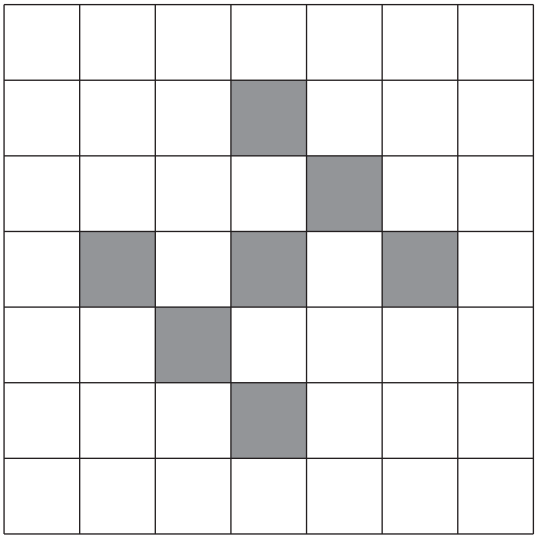
(d) Draw **all** the lines of symmetry on the following figures.

[3]

(i)



(ii)



0185 080007

STEMUP.CO.UK

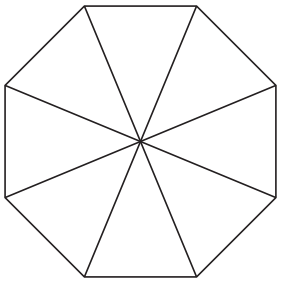
Examiner only

5. *(a)* Draw a circle around each of the following fractions that are equal to $\frac{1}{5}$.

$\frac{5}{25}$ $\frac{3}{10}$ $\frac{4}{15}$ $\frac{2}{10}$ $\frac{5}{15}$

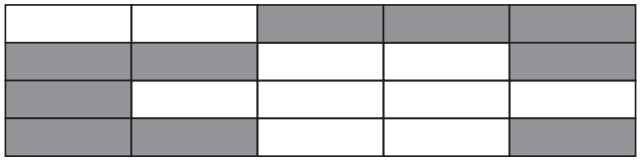
[2]

(b) Shade 75% of the following figure.



[1]

(c) What percentage of the following shape is shaded?



.....

[1]

STEMUP.CO.UK

Examiner only

6. *(a)* Describe, **in words**, the rule for continuing **each** of the following sequences.

(i) 6, 15, 24, 33, ...

Rule: .....

.....

(ii) 243, 81, 27, 9, ...

Rule: .....

.....

[2]

(b) A rule connecting V and T is $V = 90 - 10T$.
Find the value of V when $T = 5$.

.....

.....

.....

.....

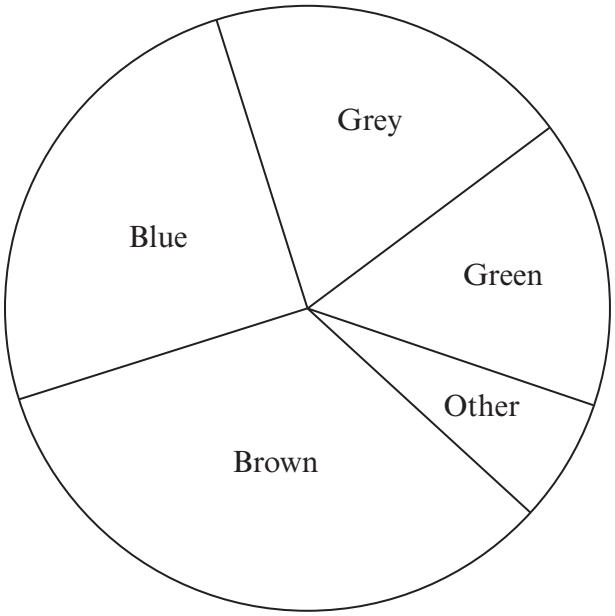
[2]

0185 080009

STEMUP.CO.UK

Examiner only

7. The eye colour of each of 96 pupils was recorded.
The data obtained was used to draw the following pie chart.



(a) What **fraction** of the pupils have blue eyes?

.....

.....

[2]

(b) **How many** pupils have brown eyes?

.....

.....

.....

.....

.....

.....

[2]

STEMUP.CO.UK

Examiner only

8. In a quiz, each contestant is asked 4 questions.
Contestants score 3 points for each correct answer, – 2 points for each incorrect answer and 0 if they pass (do not offer an answer).

(a) What is the score of a contestant who answers the first 3 questions correctly and answers the fourth incorrectly?

.....

.....

[1]

(b) What is the score of a contestant who answers the first question correctly, passes on the second question and answers the last two incorrectly?

.....

.....

[1]

(c) Lesley did the quiz and answered the first question correctly. Her final score was – 3. Explain fully how this happened.

.....

.....

[2]

0185 080011

STEMUP.CO.UK

Examiner only

9. In a large school, the number of absences in each of eight weeks was as follows:

87 65 83 49 78 69 55 58

(a) Find the mean number of absences per week.

.....

.....

.....

.....

[3]

(b) Find the median number of absences per week.

.....

.....

.....

.....

[2]

(c) Find the range of the number of absences per week.

.....

.....

.....

.....

[1]

STEMUP.CO.UK

Examiner only

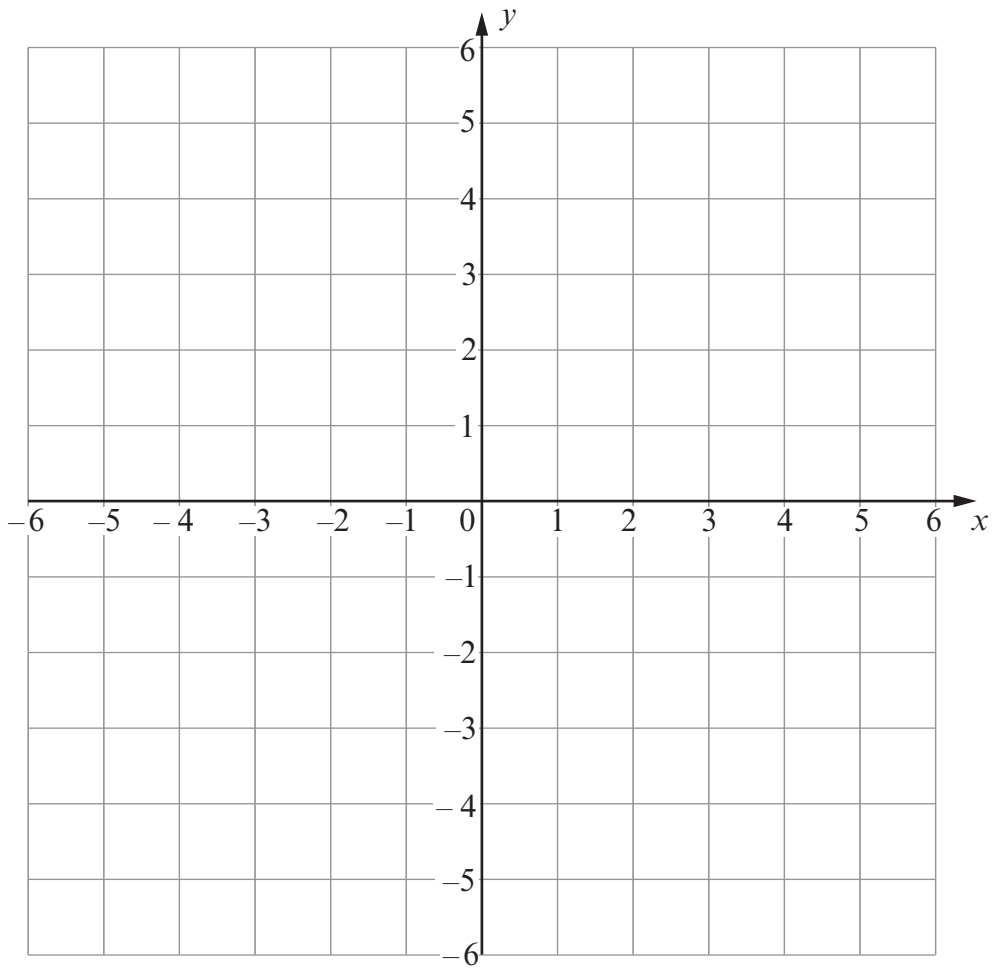
10. *(a)* On the squared paper below, plot the points $A(5, -3)$ and $B(-1, -5)$.

[2]

(b) Write down the coordinates of the mid-point of AB.

.....

[2]



STEMUP.CO.UK

Examiner only

11. Arthur and Beryl went on holiday to Ghana.
The currency in Ghana is the cedi.

(a) They changed £1400 into cedis when the exchange rate was £1 = 2.31 cedis.
How many cedis did they receive?

.....

.....

.....

.....

[2]

(b) Whilst in Ghana they bought a gift for 157.08 cedis.
How much is the gift in pounds?

.....

.....

.....

.....

[2]

STEMUP.CO.UK

Examiner only

12. *(a)* In an examination with a total mark of 140, Alice scored 119.
What percentage is this?

.....

.....

.....

.....

[2]

(b) Osian's wage is £850 each month.
This is increased by 4%.
Calculate his new monthly wage.

.....

.....

.....

.....

[2]

(c) The total cost of 4 bags of chips and 5 fish is £16.35.
The chips are £1.15 a bag.
Find the cost of one fish.

.....

.....

.....

.....

.....

.....

[4]

STEMUP.CO.UK

Examiner only

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

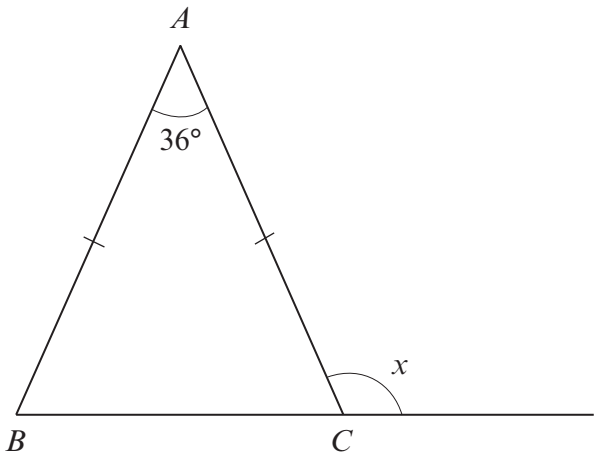


Diagram not drawn to scale

.....

.....

.....

.....

$x =$ ..... °

[3]

STEMUP.CO.UK

Examiner only

(b) Given that *ABCD* is a rhombus, find the value of the angle marked *y*.

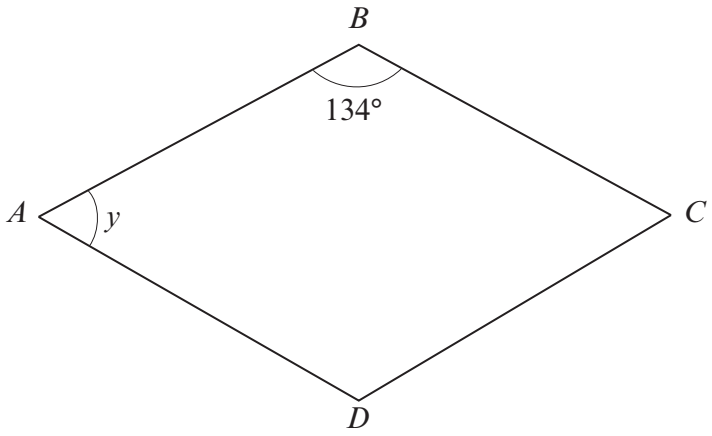


Diagram not drawn to scale

.....

.....

.....

$y =$ ..... °

[2]

STEMUP.CO.UK

Examiner only

14. *(a)* Write down the next two terms of the following sequence.

20, 17, 13, 8, ..., ...

.....

.....

[2]

(b) Solve

(i) $\frac{x}{4} = 8$,

.....

.....

(ii) $6x - 9 = 18$.

.....

.....

[3]

(c) Simplify $5a + 6b + 2a - 4b$.

.....

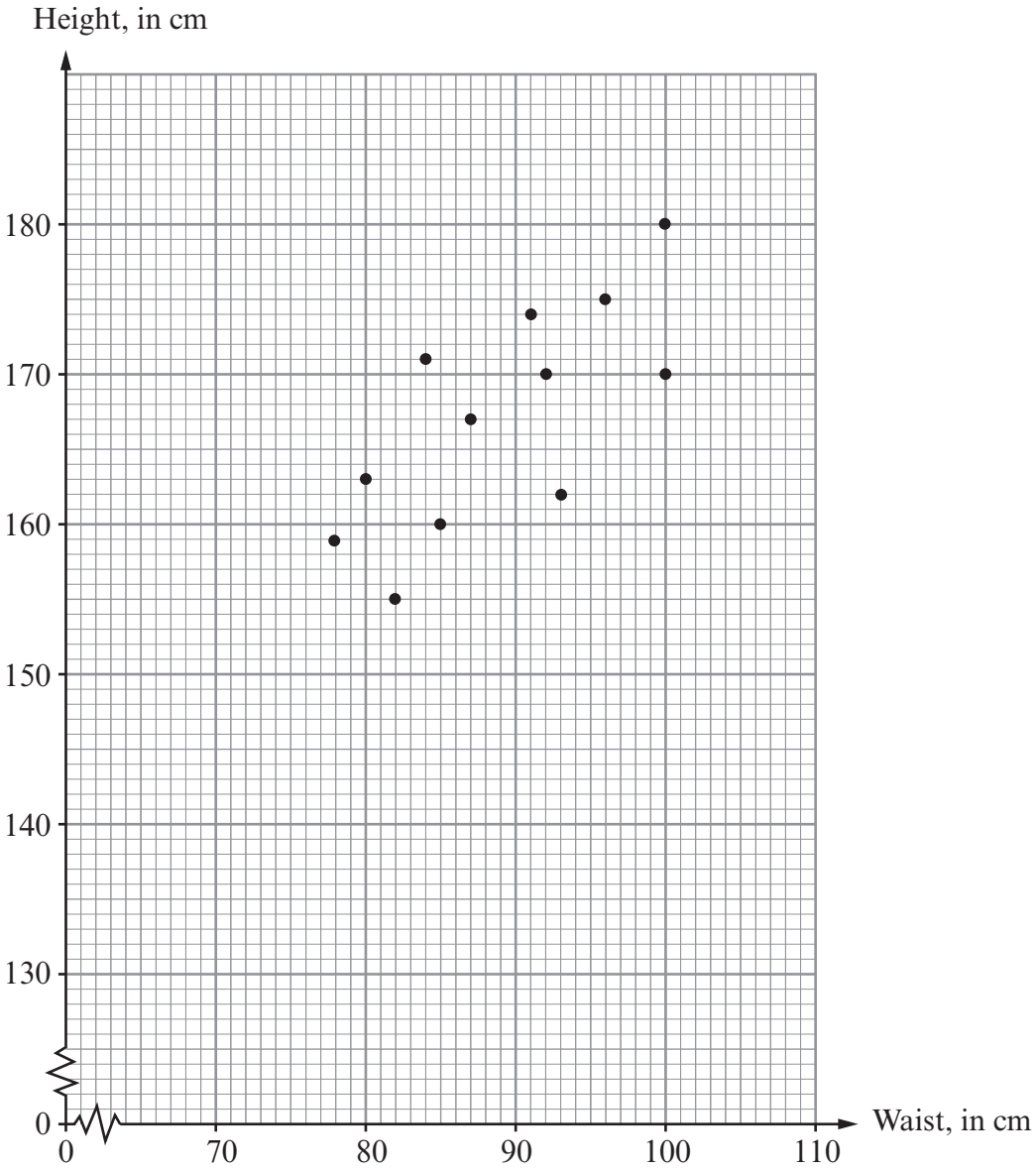
.....

[2]

STEMUP.CO.UK

Examiner only

15. The scatter diagram shows the heights and waist measurements, in cm, of 12 people in a darts club.



(a) Write down the height and waist measurement of the **tallest** of the 12 people.

Height ..... cm

Waist ..... 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 height of another member of the darts club with a waist measurement of 90 cm.

.....
[1]

STEMUP.CO.UK

Examiner only

16.

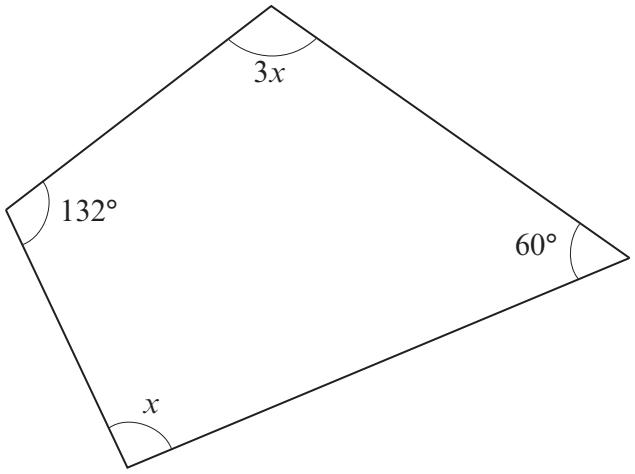


Diagram not drawn to scale

Calculate the value of x.

.....

.....

.....

.....

.....

.....

.....

x = ...

[4]

STEMUP.CO.UK

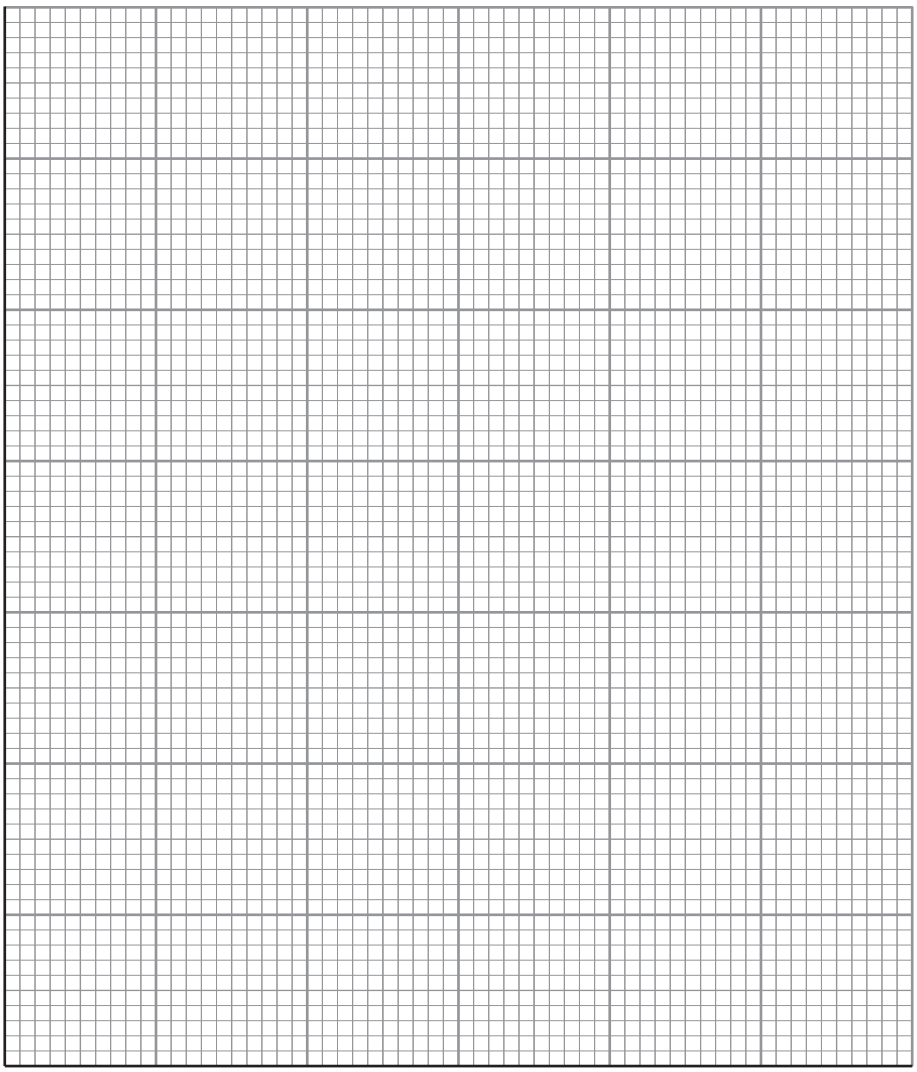
Examiner only

17. The chest measurements of 20 boys in a class were recorded.
The table below shows a summary of the results.

Chest measurement (x cm)	Number of boys
$90 \leqslant x < 95$	4
$95 \leqslant x < 100$	12
$100 \leqslant x < 105$	3
$105 \leqslant x < 110$	1

On the graph paper below, draw a grouped frequency diagram to show the distribution of the chest measurements.

[4]



STEMUP.CO.UK

Examiner only

18. *(a)* Ruth and Tony share £1491 in the ratio 2 : 5.
Calculate how much they each receive.

.....

.....

.....

Ruth £ .....

Tony £ .....

[2]

(b) Find the compound interest, to the nearest penny, when £6000 is invested for 3 years at 4% per annum.

.....

.....

.....

.....

.....

.....

.....

.....

.....

[4]

STEMUP.CO.UK

Examiner only

19. Two friends, Kim and Terry, are planning a camping holiday.

The floor of their tent can be thought of as a rectangle.
The tent has a ground area of $5{\cdot}12\,m^2$.



Diagram not drawn to scale.

The length of the tent is twice as long as the width.
Calculate the length and width of the floor of the tent.

.....

.....

.....

.....

.....

.....

.....

.....

Length ..... metres Width ..... metres

[4]

STEMUP.CO.UK

Examiner only

20.

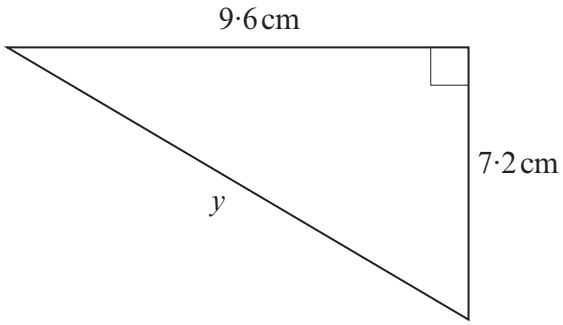


Diagram not drawn to scale

Calculate the length of the side marked y.

.....

.....

.....

.....

.....

[3]

STEMUP.CO.UK