

Centre No.						Paper Reference						Surname	Initial(s)	
Candidate No.						1	3	8	0	/	1	F	Signature	

Paper Reference(s)

1380/1F

Edexcel GCSE

Mathematics (Linear) – 1380

Paper 1 (Non-Calculator)

Foundation Tier

Monday 6 June 2011 – Afternoon

Time: 1 hour 30 minutes



Examiner's use only

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Team Leader's use only

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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 29 questions in this question paper. The total mark for this paper is 100.

There are 24 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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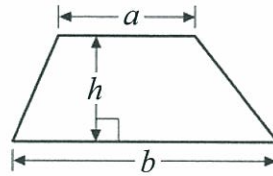
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GCSE Mathematics (Linear) 1380

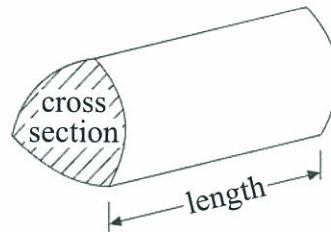
Formulae: Foundation Tier

**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 \times length



Answer ALL TWENTY NINE questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

You must NOT use a calculator.

1. The table gives some information about the number of medals won by each of 6 countries in the 2008 Olympic Games.

Country	Gold	Silver	Bronze	Total
Great Britain	19	13	15	47
France	7	16	17	40
Germany	16	10	15	41
Italy	8	10	10	28
Spain	5	10	3	18
Poland	3	6	1	10

- (a) Write down the number of Gold medals won by Germany.

16
.....
(1)

- (b) Write down the country that won the most Bronze medals.

France
.....
(1)

- (c) Write down the country that won the same number of Silver medals as Bronze medals.

Italy
.....
(1)

(Total 3 marks)

Q1



2. (a) Write the number 1345 in words.

One thousand, three hundred and forty five (1)

(b) Write the number **twelve thousand seven hundred and fifty** in figures.

12,750 (1)

(c) Write the number 4670 to the nearest hundred.

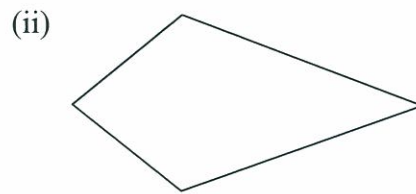
4,700 (1)

(Total 3 marks)

Q2

3. (a) Here are two quadrilaterals.

Write down the mathematical name of each quadrilateral.

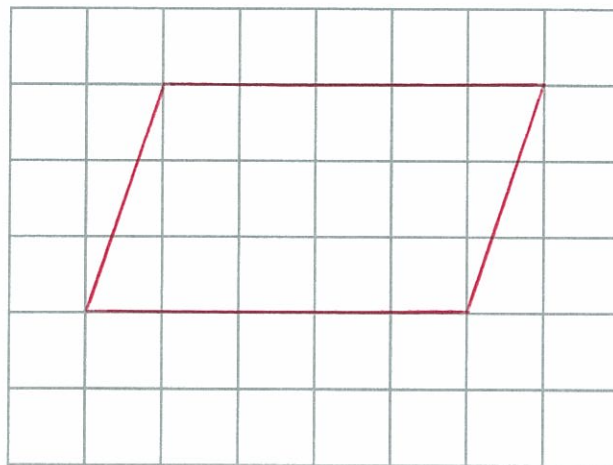


(i) Rectangle

(ii) kite

(2)

(b) On the grid, draw a parallelogram.



(1)

(Total 3 marks)

Q3



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

$$\text{Pay} = \text{£}6.20 \times \text{number of hours worked}$$

Simone works for 4 hours.

(a) Work out her pay.

$$6.2 \times 4 = 24.8$$

$$\begin{array}{r} 6.2 \\ \times 4 \\ \hline 24.8 \end{array}$$

£ 24.80
(2)

Barry's pay is £15.50

(b) How many hours did he work?

$$\frac{15.5}{6.2} = \frac{155}{62} = 2 \frac{31}{62} = 2 \frac{1}{2} \text{ or } 2.5$$

$$\begin{array}{r} 2.5 \\ 62 \overline{) 155} \end{array}$$

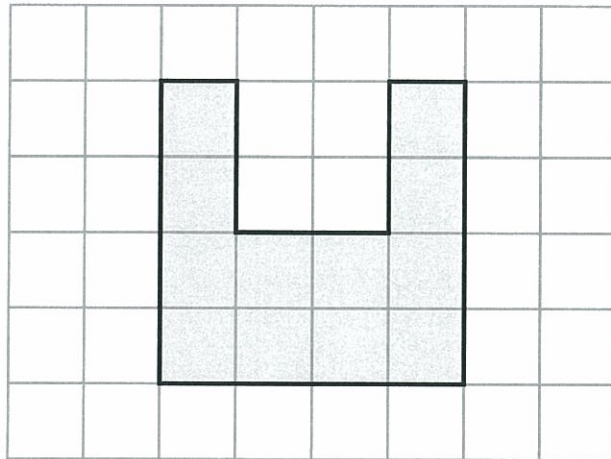
2.5 hours
(2)

(Total 4 marks)

Q4



5. This shaded shape is drawn on a grid of centimetre squares.



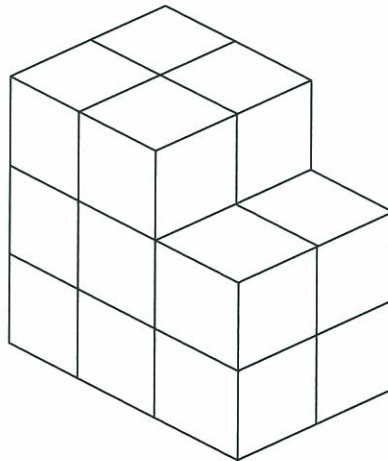
(a) (i) Find the perimeter of the shaded shape.

..... 20 cm

(ii) Find the area of the shaded shape.

..... 12 cm²
(2)

This solid prism is made from centimetre cubes.



(b) Find the volume of the prism.

$$(2 \times 3 \times 2) + 4 = 12 + 4 = 16 \text{ cm}^3$$

..... 16 cm³
(1)

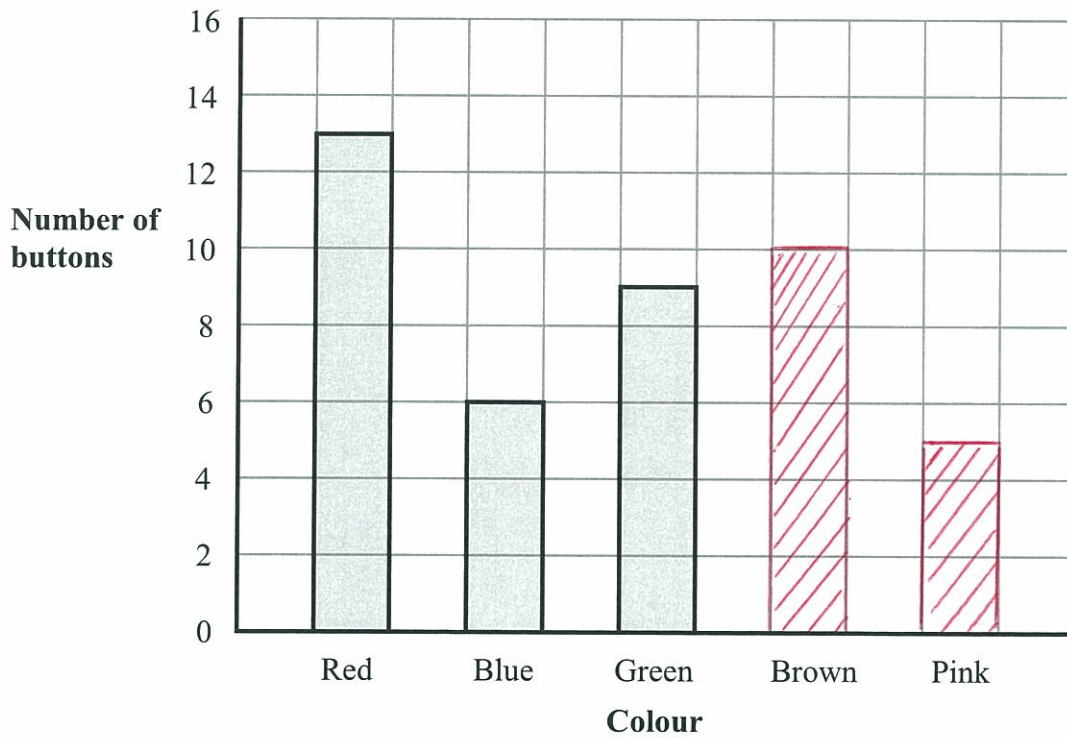
(Total 3 marks)

Q5



6. The incomplete table and bar chart give some information about the colours of buttons in a box.

Colour	Number of buttons
Red	13
Blue	6
Green	9
Brown	10
Pink	5



(a) Use the bar chart to complete the table.

(2)

(b) Use the table to complete the bar chart.

(2)

(Total 4 marks)

Q6



7. (a) Write $\frac{10}{3}$ as a mixed number.

$$3 \frac{1}{3}$$

$$3 \frac{1}{3}$$

(1)

(b) Here are two fractions

$$\frac{3}{5} \text{ and } \frac{2}{3}$$

Which is the larger fraction?

You must show your working to explain your answer.

$$\text{LCM} \{5, 3\} = 15$$

$$\frac{3}{5} = \frac{9}{15} \quad \text{and} \quad \frac{2}{3} = \frac{10}{15}$$

$$10 > 9 \text{ so } \frac{2}{3} > \frac{3}{5}$$

$$\frac{2}{3}$$

(3)

(c) Work out $\frac{4}{5} \times \frac{3}{8}$

Give your fraction in its simplest form.

$$\frac{4 \times 3}{5 \times 8} = \frac{12}{40} = \frac{6}{20} = \frac{3}{10}$$

$$\frac{3}{10}$$

(2)

(Total 6 marks)

Q7



8. (a) Write down the value of $\sqrt{36}$

$$6^2 = 36, \text{ so } \sqrt{36} = 6$$

6

.....
(1)

(b) Estimate $\sqrt{200}$
Explain how you got your answer.

$$\sqrt{200} = \sqrt{4 \times 50}$$

$$\sqrt{4 \times 50} = \sqrt{4} \times \sqrt{50} = 2\sqrt{50}$$

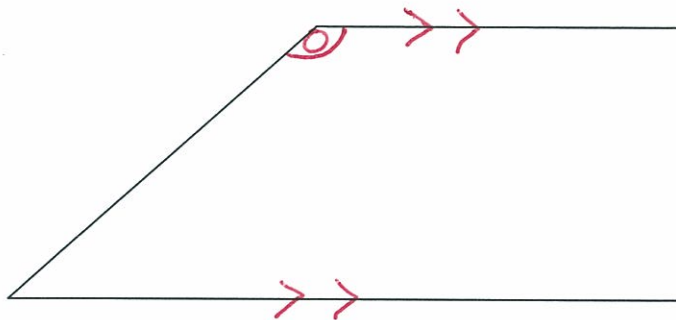
An estimate for $\sqrt{50}$ would be $\sqrt{49}$, which is 7. $\therefore \sqrt{200} \approx \sqrt{4} \times \sqrt{49} = 2(7) = 14$.

(2)

Q8

(Total 3 marks)

9. Here is a trapezium.



In the trapezium,

- (i) mark with arrows (>>) the pair of parallel lines,
- (ii) mark with the letter O the obtuse angle,
- (iii) measure the size of the acute angle.

42 °

.....

(Total 3 marks)

Q9



10. Here are the first four terms in a number sequence.

7 12 17 22

(a) (i) Write down the next term in this number sequence.

.....
27

(ii) Give a reason for your answer.

.....
Each term in the sequence is 5 greater than the previous term. (2)

(b) Work out the tenth term in this number sequence.

$n^{\text{th}} \text{ term} = 5n + 2$
For $n = 10$ you get $5(10) + 2 = 52$ (1)

(c) Robert says,

‘The hundredth term in this number sequence is 504’.

He is **wrong**.
Explain why.

.....
Terms of this sequence must end in a 2 or 7. (1)

(Total 4 marks)

Q10



11. (a) Work out $700 - 547$

$$\begin{array}{r} 700 \\ - 547 \\ \hline 153 \end{array}$$

$$\begin{array}{r} 153 \\ \hline \end{array} \quad (1)$$

(b) Work out 354×26

$$\begin{array}{r} 354 \\ \times 26 \\ \hline 2124 \\ + 7080 \\ \hline 9204 \end{array}$$

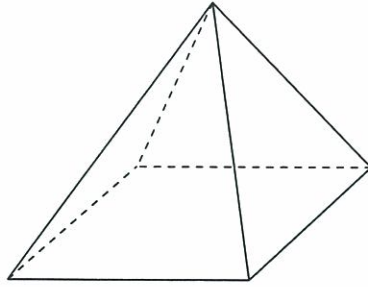
$$\begin{array}{r} 9,204 \\ \hline \end{array} \quad (3)$$

(Total 4 marks)

Q11



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



(a) Write down the mathematical name of the 3-D shape.

Square-based pyramid (1)

(b) Write down the number of faces.

5 (1)

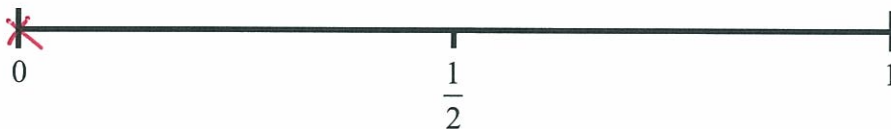
(c) Write down the number of edges.

8 (1)

(Total 3 marks)

Q12

13. (a) On the probability scale below, mark with a cross (×) the probability that a boy will grow to a height of 5 metres.



(1)

(b) On the probability scale below, mark with a cross (×) the probability that the sun will rise tomorrow.



(1)

(c) On the probability scale below, mark with a cross (×) the probability that you will get a 6 when you roll a fair dice.



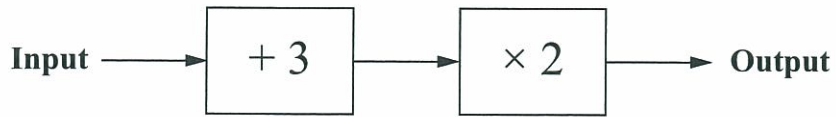
(1)

(Total 3 marks)

Q13



14. Here is a two-stage number machine.



The machine adds 3 and then multiplies by 2

Complete the table.

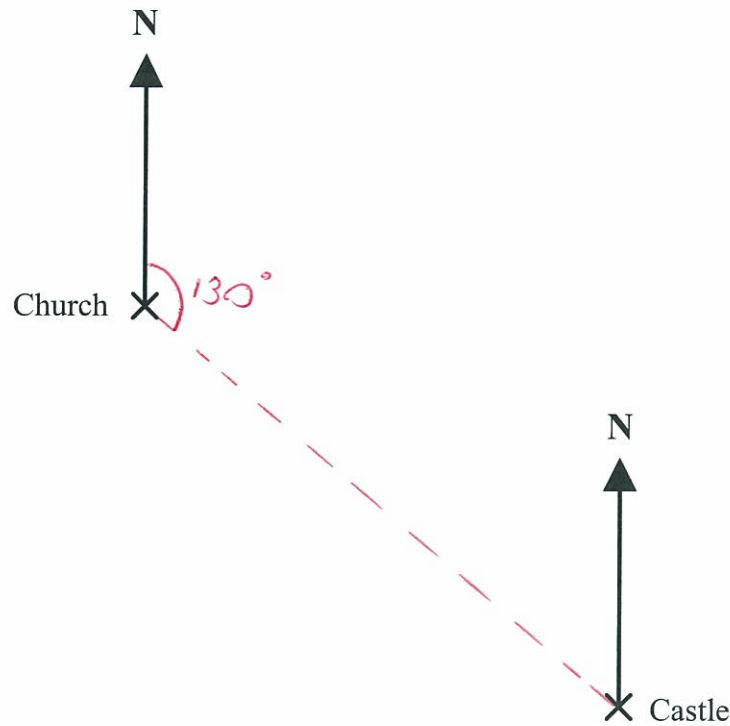
Input	Output
2	10
5	16
7	20
15	36

(Total 2 marks)

Q14



15. 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

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

$$8.2 \times 10,000 = 82,000 \text{ cm}$$

$$\frac{82,000}{100} = 820 \text{ m}$$

..... 820 m
(2)

- (b) Find the bearing of the castle from the church.

..... 130 °
(1)

(Total 3 marks)

Q15



16. The table shows part of a train timetable from Weymouth to London Waterloo.

Weymouth	09 03	09 20	10 03	10 20	11 03
Poole	09 40	10 07	10 40	11 07	11 40
Bournemouth	09 53	10 17	10 54	11 17	11 54
Southampton	10 26	10 58	11 28	11 58	12 28
Woking	11 19		12 19		13 19
London Waterloo	11 49	12 20	12 49	13 20	13 49

A train leaves Weymouth at 09 03

(a) At what time should it arrive at London Waterloo?

11:49

 (1)

Another train leaves Poole at 11 40

(b) How many minutes should it take to travel to Bournemouth?

14 minutes
 (1)

Sally lives in Weymouth.

She has a meeting in Southampton at 12 00

When Sally arrives at Southampton she takes 25 minutes to travel to her meeting.

(c) What is the time of the latest train she can take from Weymouth?

10:03

 (1)

(Total 3 marks)

Q16



17. Work out an estimate for $\frac{7.19 \times 19.7}{0.46}$

$$\frac{7 \times 20}{0.5} = \frac{140}{0.5} = 280$$

N.B: $\frac{140}{0.5} \equiv 140 \div \frac{1}{2}$
 $= 140 \times \frac{2}{1} = 280$

280

Q17

(Total 3 marks)

18. The two-way table shows some information about where 50 people went to university.

	Scotland	Wales	England	Total
Male	3	3	19	25
Female	4	5	16	25
Total	7	8	35	50

(a) Complete the two-way table.

(3)

One of these people is picked at random.

(b) Work out the probability that this person

(i) went to university in Scotland,

$$\frac{7}{50}$$

(ii) is a female who did **not** go to university in England.

$$\frac{9}{50}$$

(2)

Q18

(Total 5 marks)



19. Amy buys 50 computers.
She pays £160 for each computer.

Amy is going to sell **some** of the computers.
She wants to get at least 35% more than she paid for **all** the computers.
She is going to sell each computer for £400

Work out the smallest number of computers Amy needs to sell.

$$\begin{array}{r}
 160 \\
 \times 50 \\
 \hline
 000 \\
 + 8000 \\
 \hline
 8000
 \end{array}$$

Total cost = £8,000

35% of 8000

$$= \frac{35}{100} \times 8000 = \frac{7}{20} \times 8000$$

$$= 400 \times 7 = 2800$$

Minimum revenue = £10,800.

Smallest no. of computers Amy needs to sell is

given by $\frac{10800}{400} = \frac{108}{4} = 27$

$$\begin{array}{r}
 27 \\
 4 \overline{) 108}
 \end{array}$$

27

(Total 4 marks)

Q19



20. The table gives the maximum speeds of two cars, car A and car B.

	Car A	Car B
Maximum speed	184 km/h	120 mph

Which car has the greater maximum speed?

You must show clearly how you get your answer.

There are approx' 1.6 km in 1 mile.

$$120 \times 1.6 = 120 \times \frac{16}{10} = 120 \times \frac{8}{5}$$

$$= 24 \times 8 = 192 \text{ km/h}$$

\therefore Car B has the greater maximum speed.

Q20

(Total 2 marks)

21. $H = 2a + 3b$

$a = 5$

$b = -1$

(a) Work out the value of H .

$$H = 2(5) + 3(-1) = 10 - 3 = 7$$

7

(2)

$P = 3h^2$

$h = -4$

(b) Work out the value of P .

$$P = 3(-4)^2 = 3 \times 16 = 48$$

48

(2)

(Total 4 marks)

Q21



22. 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?

$$\frac{3}{8} + \frac{40}{100} = \frac{3}{8} + \frac{2}{5} = \frac{(3 \times 5) + (2 \times 8)}{8 \times 5}$$

$$= \frac{15 + 16}{40} = \frac{31}{40}$$

$$1 - \frac{31}{40} = \frac{40}{40} - \frac{31}{40} = \frac{9}{40}$$

$$\frac{9}{40}$$

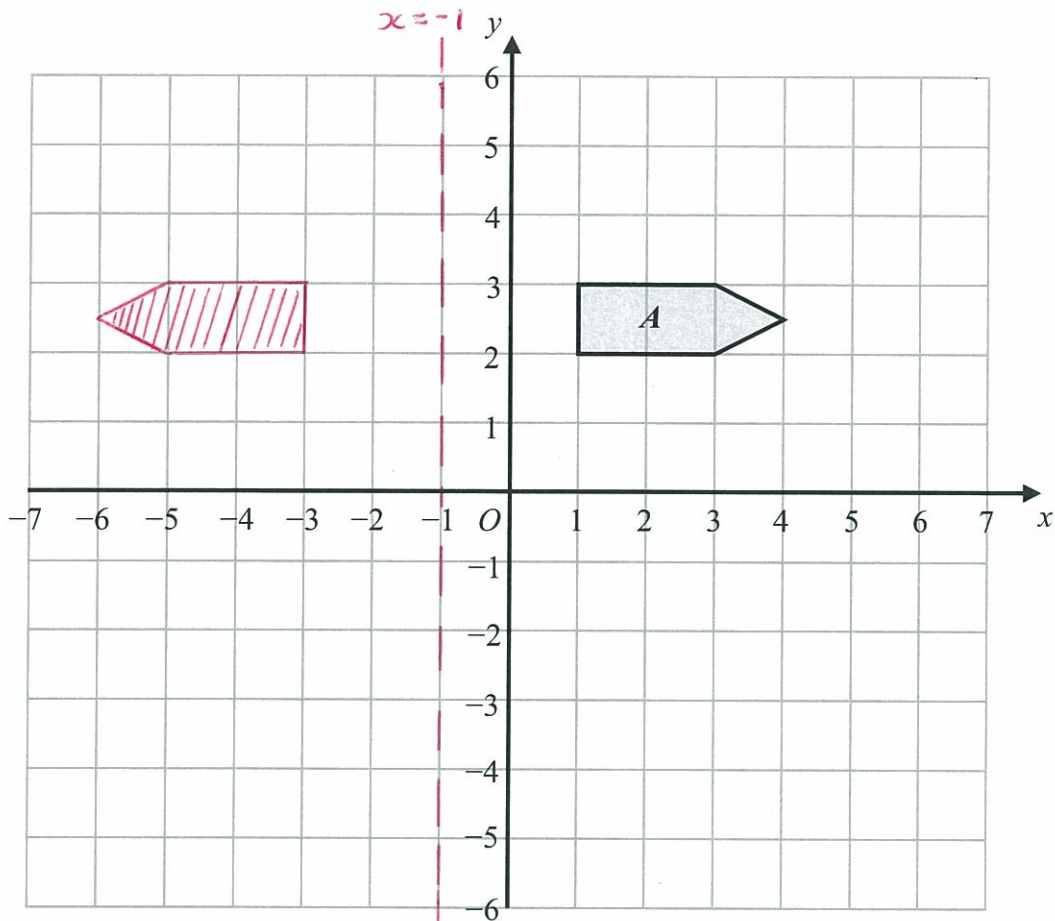
.....

(Total 3 marks)

Q22

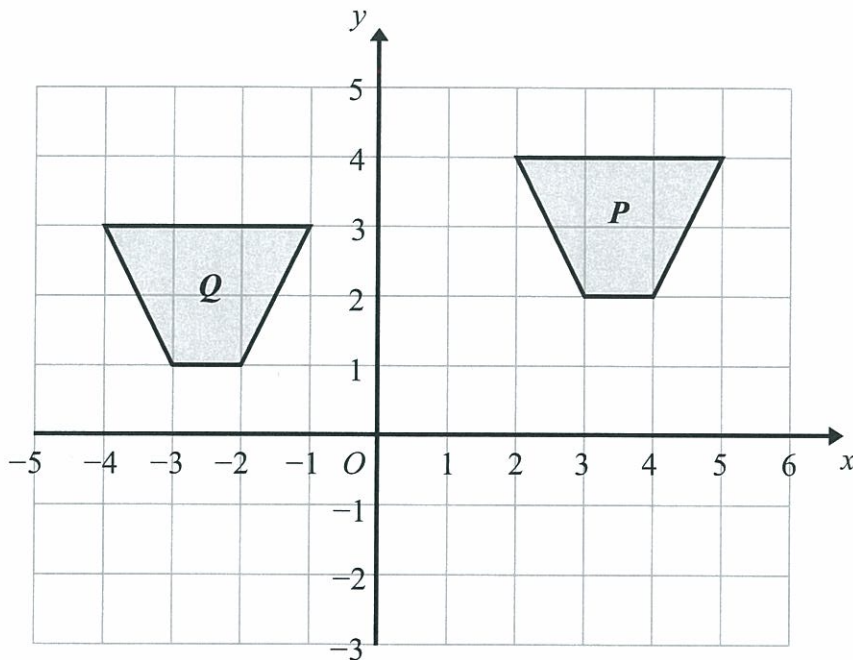


23.



(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 .

A translation by the vector $\begin{pmatrix} -6 \\ -1 \end{pmatrix}$

(2)

(Total 4 marks)

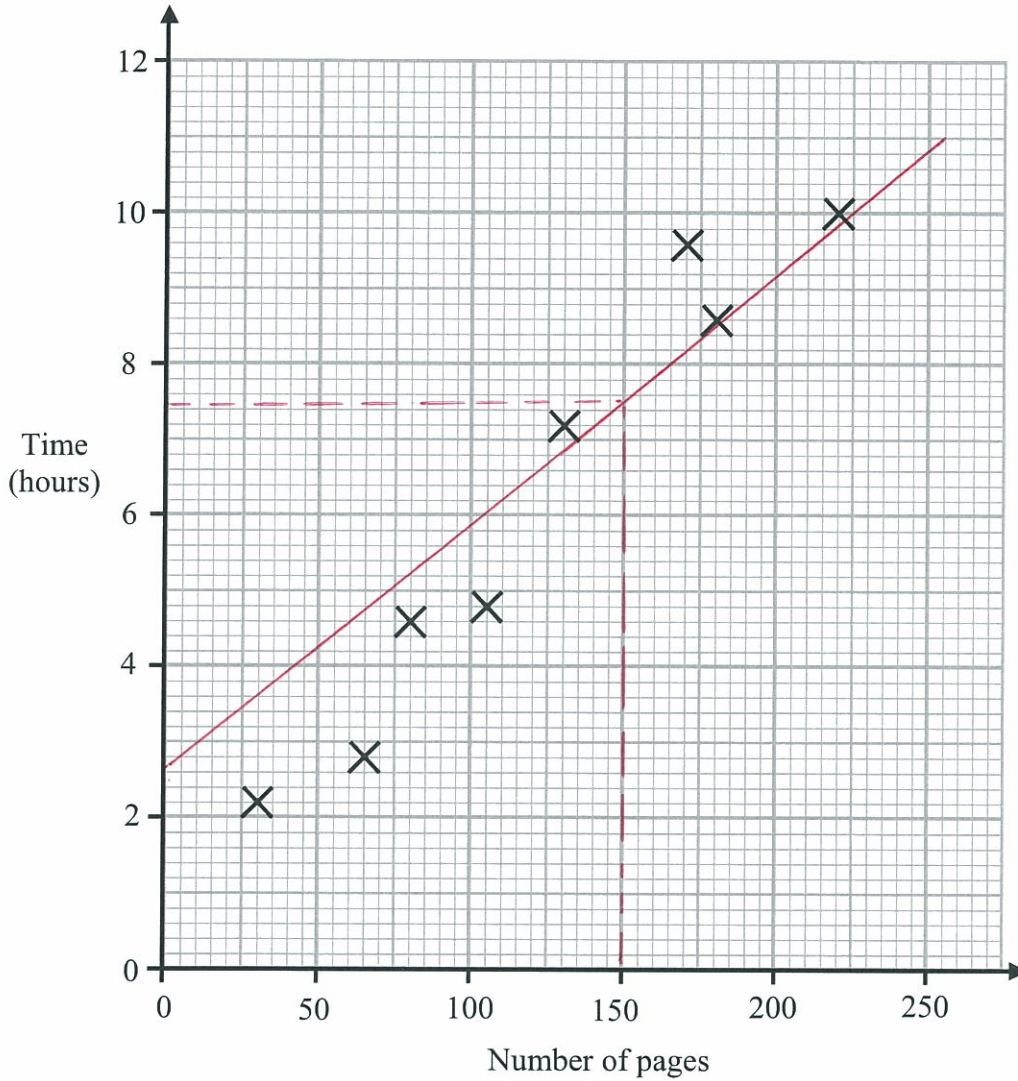
Q23



24. Harriet reads eight books.

For each book she records the number of pages and the time she takes to read it.

The scatter graph shows information about her results.



- (a) Describe the relationship between the number of pages in a book and the time Harriet takes to read it.

Positive correlation

(1)

Harriet reads another book.
The book has 150 pages.

- (b) Estimate the time it takes Harriet to read it.

7.5 hours

(2)

(Total 3 marks)

Q24



25.

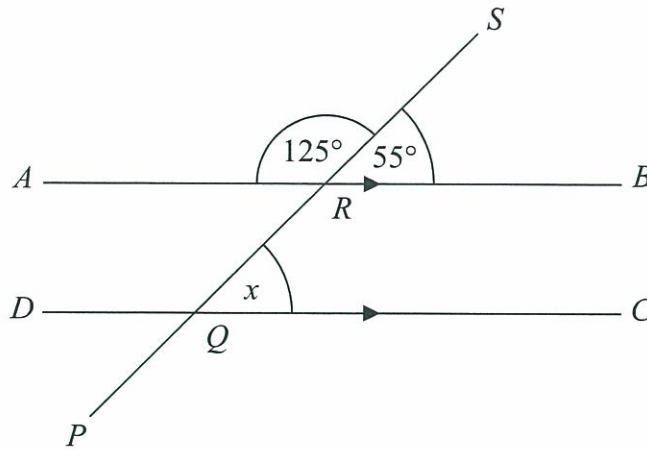


Diagram NOT accurately drawn

ARB is parallel to DQC .

$PQRS$ is a straight line.

Angle $SRB = 55^\circ$.

(i) Find the size of the angle marked x .

..... 55 °

(ii) Give a reason for your answer.

..... Angles CQR and BRS are corresponding angles

(Total 2 marks)

Q25

26. (a) Expand $x(x + 2)$

..... $x^2 + 2x$

(2)

(b) Factorise $15x - 10$

..... $5(3x - 2)$

(2)

(c) Expand and simplify $(x + 3)(x - 4)$

$$x^2 - 4x + 3x - 12$$

$$= x^2 - x - 12$$

..... $x^2 - x - 12$

(2)

(Total 6 marks)

Q26



27. 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?

Let x equal the amount that Peter gets.

Then Tarish gets $3x$ and Ben gets $2(3x) = 6x$

To determine x we can form the equation

$$x + 3x + 6x = 54$$

$$\Rightarrow 10x = 54$$

$$\Rightarrow x = £5.40$$

\therefore The amount Ben gets is given by $\frac{5.4 \times 6}{10} = 32.4$

Alternatively, observe that £54 is divided in the ratio 1:3:6

£ 32.40

(Total 3 marks)

Q27

28. Sophie wants to find out the amount of time people exercise. She will use a questionnaire.

Design a suitable question for Sophie to use in her questionnaire. You must include some response boxes.

How much time on average would you estimate you spend on exercise per week?

None 1-2 hours 3-4 hours 5-7 hrs More than 7 hours

(Total 2 marks)

Q28



29.

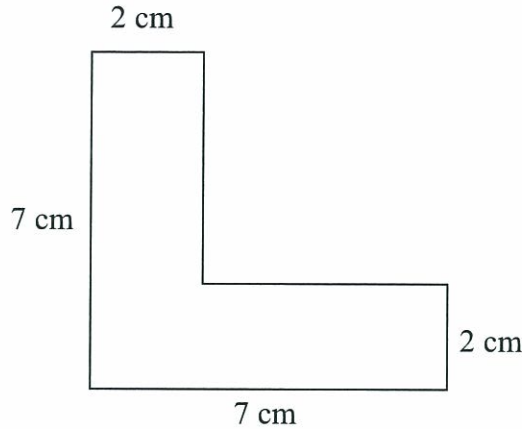


Diagram **NOT** accurately drawn

The diagram shows the cross-section of a solid prism.
The length of the prism is 2 m.

The prism is made from metal.
The density of the metal is 8 grams per cm^3 .

Work out the mass of the prism.

$$\begin{aligned}
 \text{Volume of prism} &= \text{Area of cross section} \times \text{length} \\
 &= [(7 \times 2) + (5 \times 2)] \times 200 \\
 &= 24 \times 200 \\
 &= 4800 \text{ cm}^3
 \end{aligned}$$

$$\text{Density} = \frac{\text{Mass}}{\text{Volume}}$$

$$\Rightarrow 8 = \frac{\text{Mass}}{4800}$$

$$\Rightarrow \text{Mass} = \frac{4800 \times 8}{1}$$

$$\underline{\underline{38,400}}$$

38,400 g

Q29

(Total 5 marks)

TOTAL FOR PAPER: 100 MARKS

END

