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mock papers 1-foundation

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)

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)

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)

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

Find the value of

(i) $r - s$

.....

(ii) $10r$

.....

Q5

(Total 2 marks)

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.

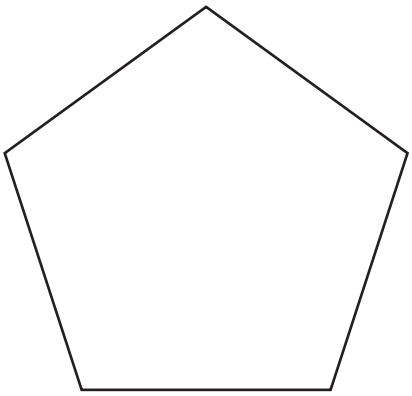
.....

(2)

Q6

(Total 4 marks)

7. Here is a regular pentagon.



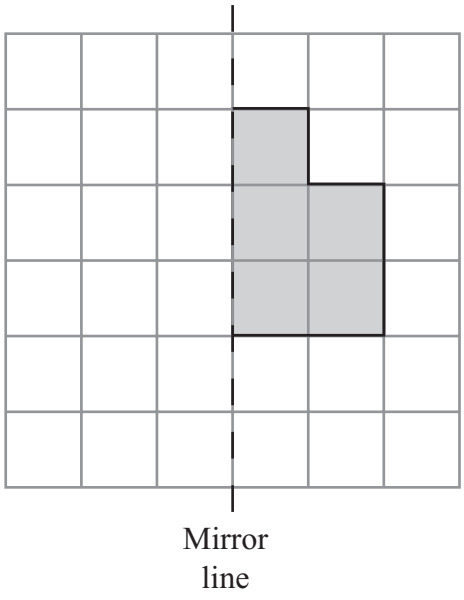
(a) What is the order of rotational symmetry of this pentagon?

.....

(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)

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?

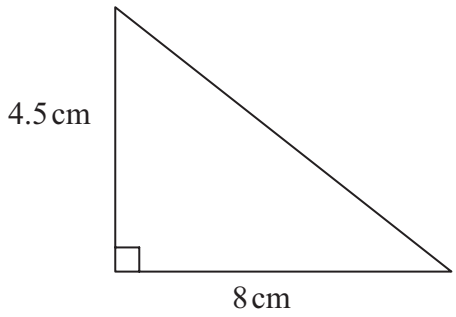
.....

(2) **Q8**

(Total 6 marks)

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)

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)

11.

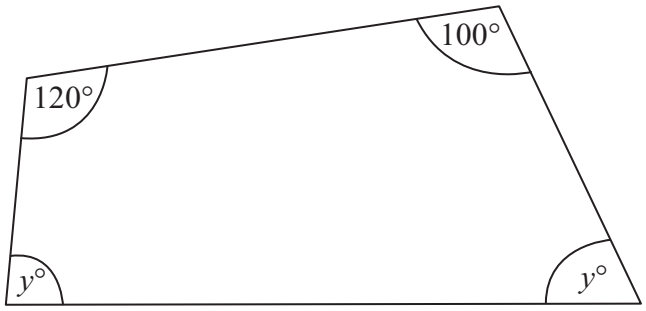


Diagram **NOT** accurately drawn

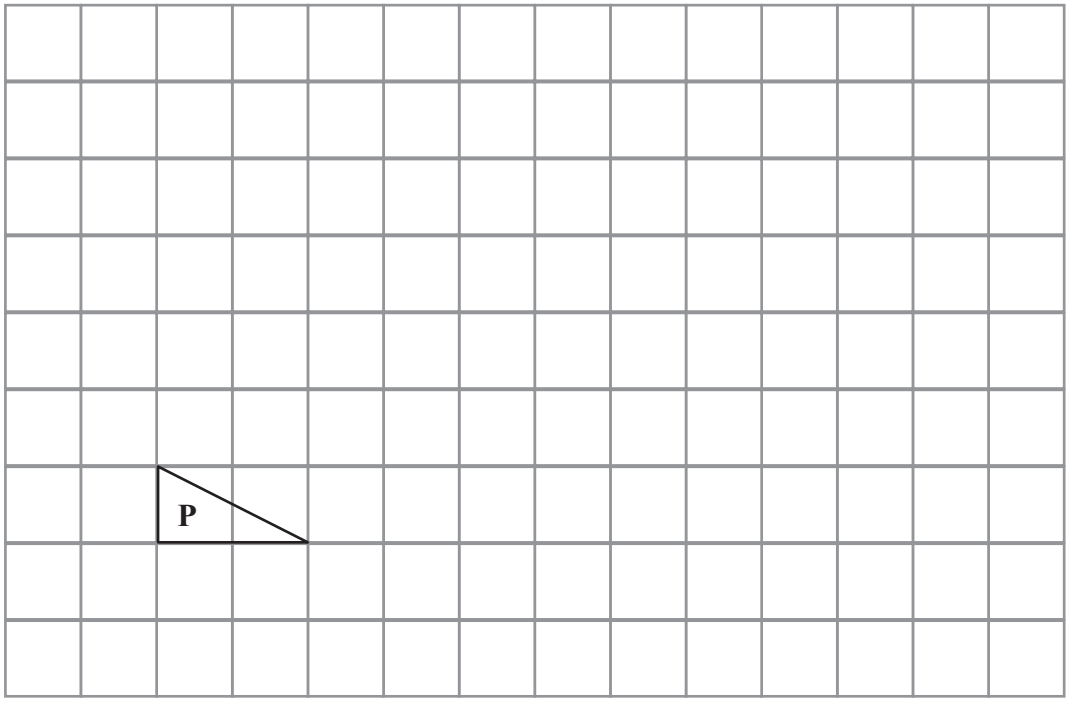
Work out the value of y.

y = ...

(Total 3 marks)

Q11

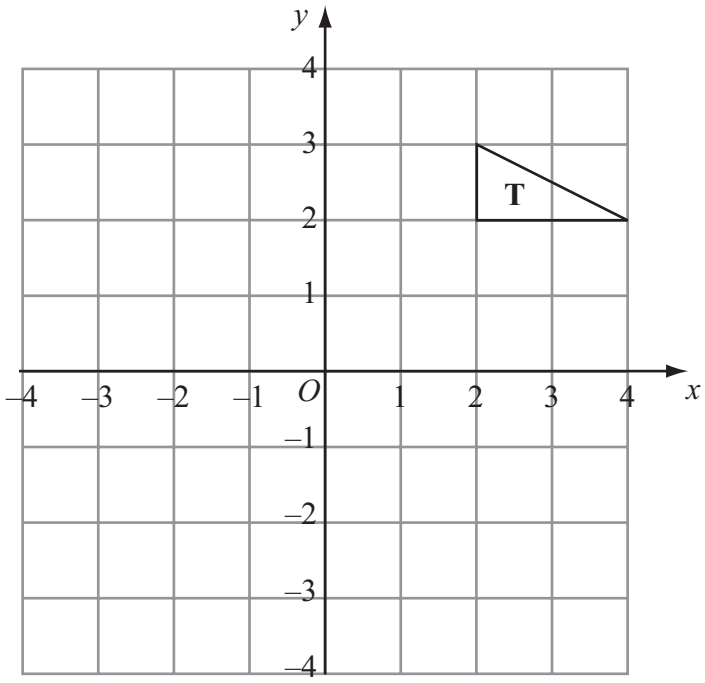
12.



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

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

(2)



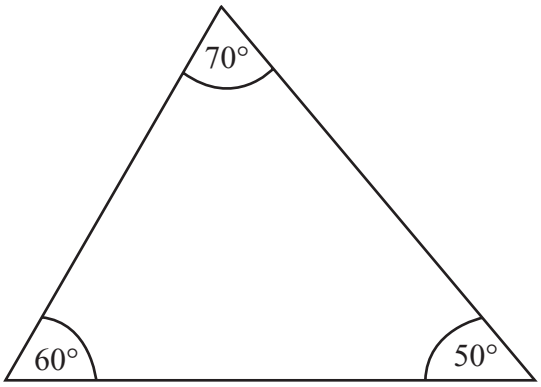
Triangle **T** has been drawn on a grid.

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

(2) **Q12**

(Total 4 marks)

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.

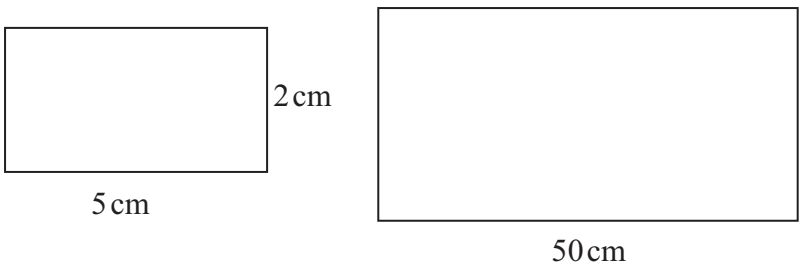


Diagram **NOT** accurately drawn

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

Ross is **correct**.
Explain why.

.....

.....

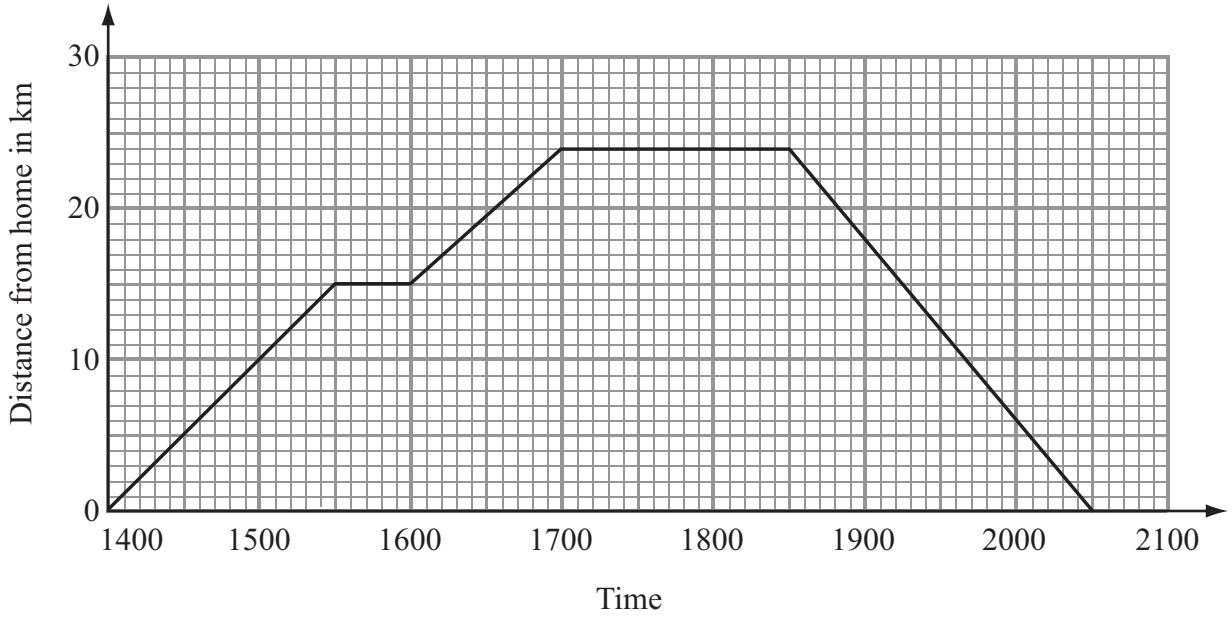
(2)

Q13

(Total 3 marks)

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)

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)

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

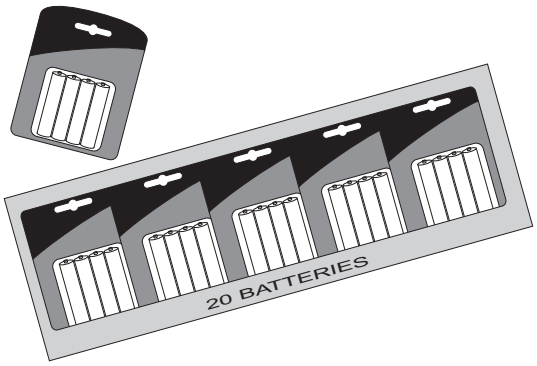
List all the possible values of k.

.....

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)

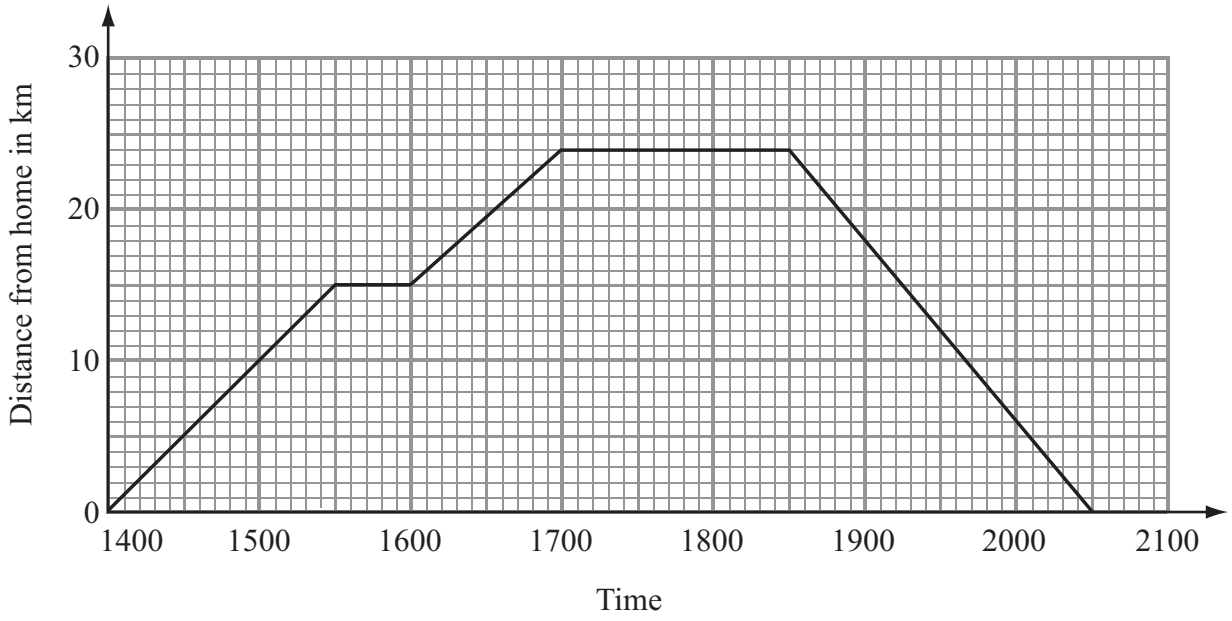
TOTAL FOR PAPER: 60 MARKS

END

mock papers 2-higher

1. Jenny cycled from home to visit her uncle.

She had a rest on the way to her uncle's house.
The travel graph shows her journey.



(a) How far is Jenny's uncle's house from Jenny's home?

..... km
(1)

(b) How long did Jenny stay at her uncle's house?

.....
(1)

Q1

(Total 2 marks)

2. (a) Work out 25% of 800

.....
(1)

(b) Write 52 out of 200 as a percentage.

..... %
(2)

(Total 3 marks)

Q2

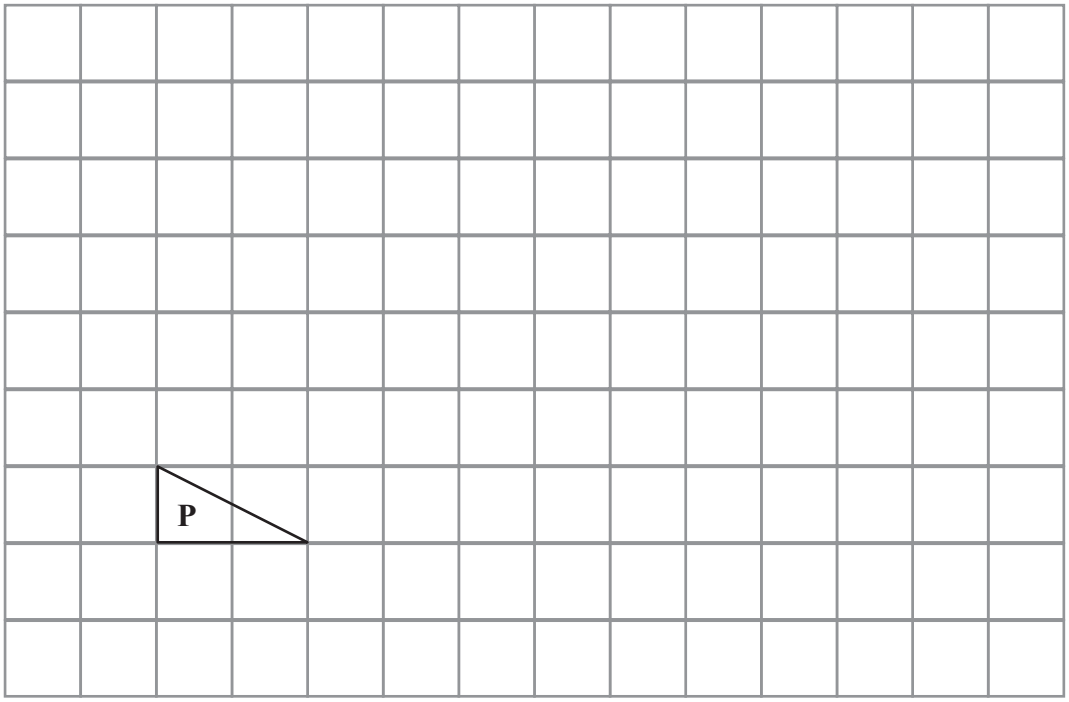
3. The ratio of pink tiles to white tiles on a bathroom floor is 1:4
There are 6 pink tiles.

Work out the number of white tiles.

.....
(Total 2 marks)

Q3

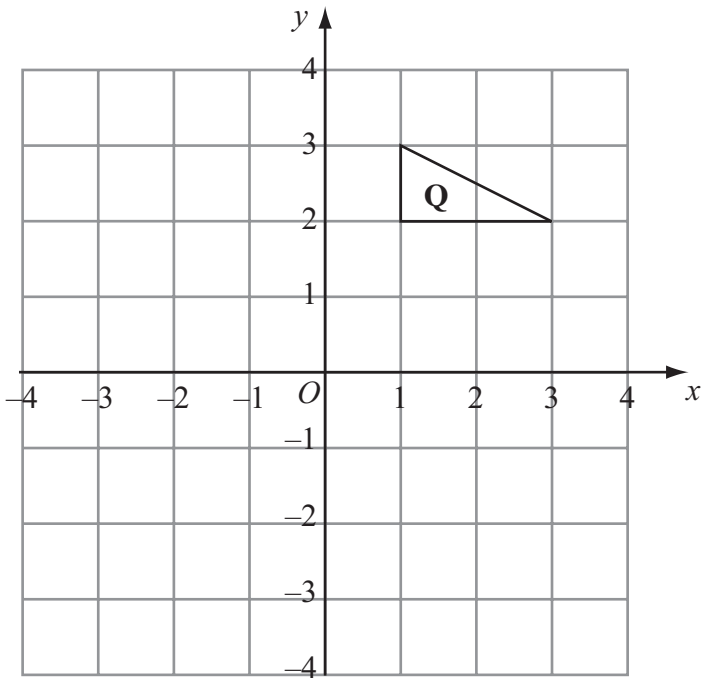
4.



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 **Q** has been drawn on a grid.

(b) On the grid, rotate triangle **Q** 90° clockwise, centre *O*.

(3) **Q4**

(Total 5 marks)

5. (a) Solve $4(x - 3) = 2x + 13$

$x =$ .....

(3)

(b) k is an integer such that $-1 \leqslant k < 3$

List all the possible values of k.

.....

(2)

(c) Solve the inequality $6y \geqslant y + 10$

.....

(2) **Q5**

(Total 7 marks)

6. (a) A solid cube has sides of length 5 cm.

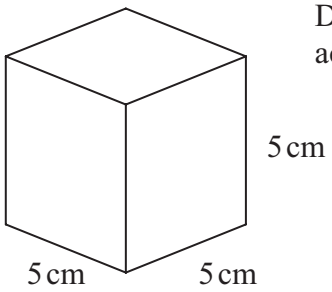


Diagram **NOT** accurately drawn

Work out the total surface area of the cube.
State the units of your answer.

.....

(4)

The volume of the cube is 125 cm^3.

(b) Change 125 cm^3 into mm^3.

..... mm^3

(2)

Q6

(Total 6 marks)

7. (a) Work out $\frac{3}{8}+\frac{1}{4}$

Give your answer in its simplest form.

.....

(2)

(b) Work out $\frac{2}{3}\times\frac{4}{5}$

.....

(2) **Q7**

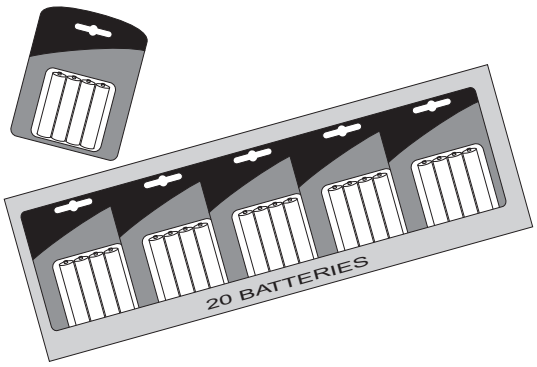
(Total 4 marks)

8. 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.



..... **Q8**

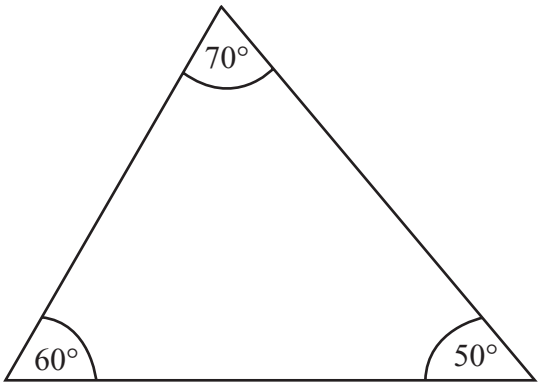
(Total 3 marks)

9. Make q the subject of the formula $5(q + p) = 4 + 8p$
Give your answer in its simplest form.

q = ... **Q9**

(Total 3 marks)

10. (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.

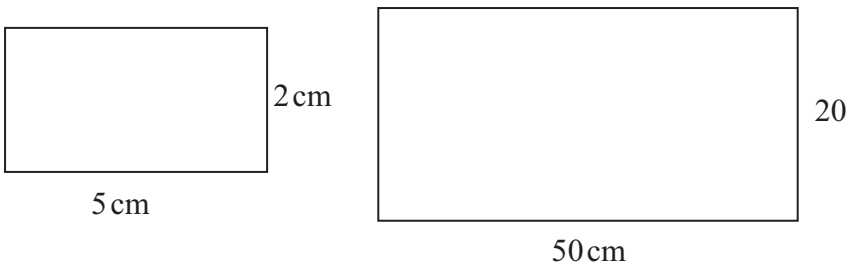


Diagram **NOT** accurately drawn

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

Ross is **correct**.
Explain why.

.....

.....

(2)

Q10

(Total 3 marks)

11.

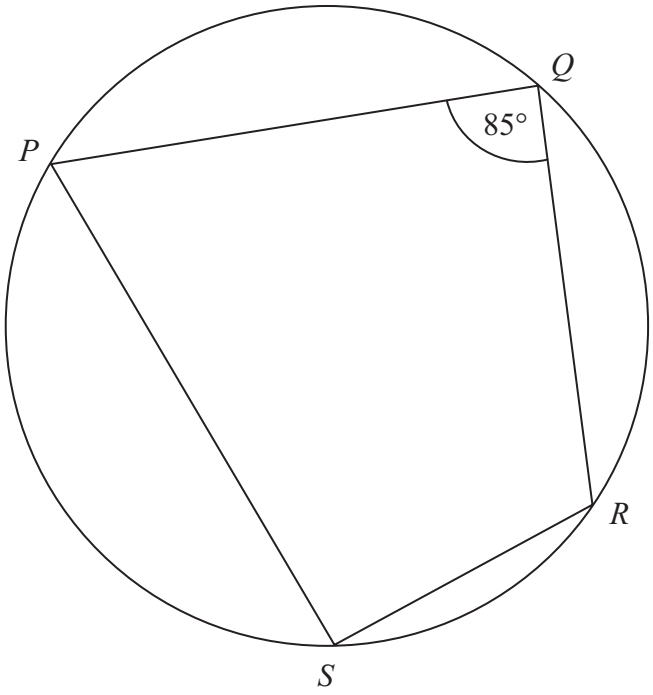


Diagram **NOT** accurately drawn

P, *Q*, *R* and *S* are points on the circumference of a circle.
Angle *PQR* = 85°.

Find the size of angle *PSR*.

Give a reason for your answer.

..... °

Q11

(Total 2 marks)

12. Solve the simultaneous equations

$$4x + y = -1$$

$$4x - 3y = 7$$

$x =$ ..... $y =$ .....

(Total 3 marks)

Q12

13. Work out $\dfrac{5\times10^{8}}{2\times10^{15}}$

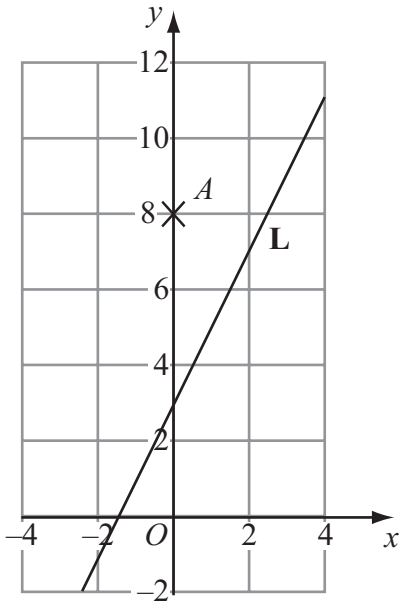
Give your answer in standard form.

.....

(Total 2 marks)

Q13

14.



A is the point (0, 8).
L is the line with equation $y = 2x + 3$

Find the equation of the line passing through *A*, that is also perpendicular to **L**.

.....

Q14

(Total 3 marks)

15. (a) Work out $(9^{\frac{1}{2}})^4$

.....

(1)

$y^3 = 11$
y can be written in the form 11^a

(b) Write down the value of a.

$a =$ .....

(1)

Q15

(Total 2 marks)

16. Work out $(2 + \sqrt{3})(2 - \sqrt{3})$

Give your answer in its simplest form.

.....

Q16

(Total 2 marks)

17.

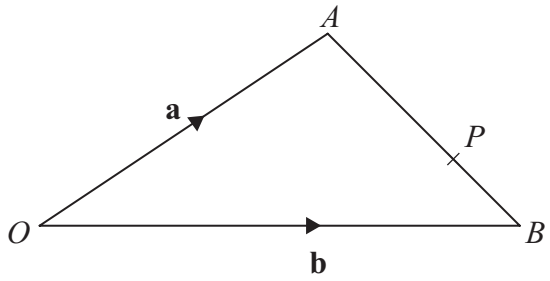


Diagram **NOT** accurately drawn

OAB is a triangle.

$\overrightarrow{OA} = \mathbf{a}$, $\overrightarrow{OB} = \mathbf{b}$

(a) Find the vector $\overrightarrow{AB}$ in terms of **a** and **b**.

$\overrightarrow{AB}$ = ...

(1)

P is the point on *AB* so that $AP : PB = 2 : 1$

(b) Find the vector $\overrightarrow{OP}$ in terms of **a** and **b**.
Give your answer in its simplest form.

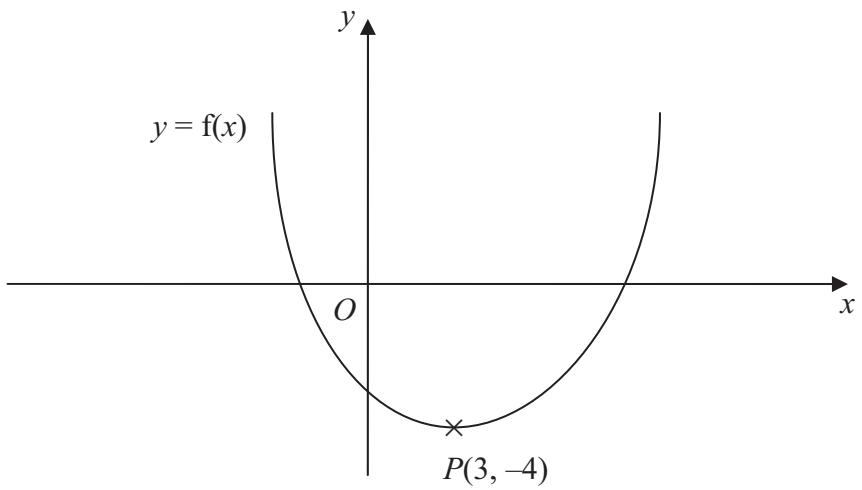
$\overrightarrow{OP}$ = ...

(3)

Q17

(Total 4 marks)

18. This is a sketch of the curve with the equation $y = f(x)$.
The only minimum point of the curve is at $P(3, -4)$.



(a) Write down the coordinates of the minimum point of the curve with the equation $y = f(x - 2)$

(..... , ...)
(2)

(b) Write down the coordinates of the minimum point of the curve with the equation $y = f(x + 5) + 6$

(..... , ...)
(2) **Q18**

(Total 4 marks)

TOTAL FOR PAPER: 60 MARKS

END

mock papers 3-foundation

1. (a) Work out 203 – 87

.....

(1)

(b) Work out – 5 – 6

.....

(1)

(c) Work out 6.41 + 0.36

.....

(1)

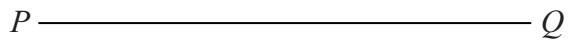
(d) Work out 100 ÷ 20

.....

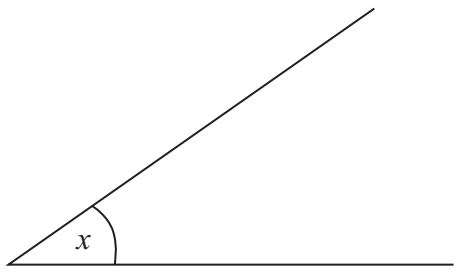
(1) **Q1**

(Total 4 marks)

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.

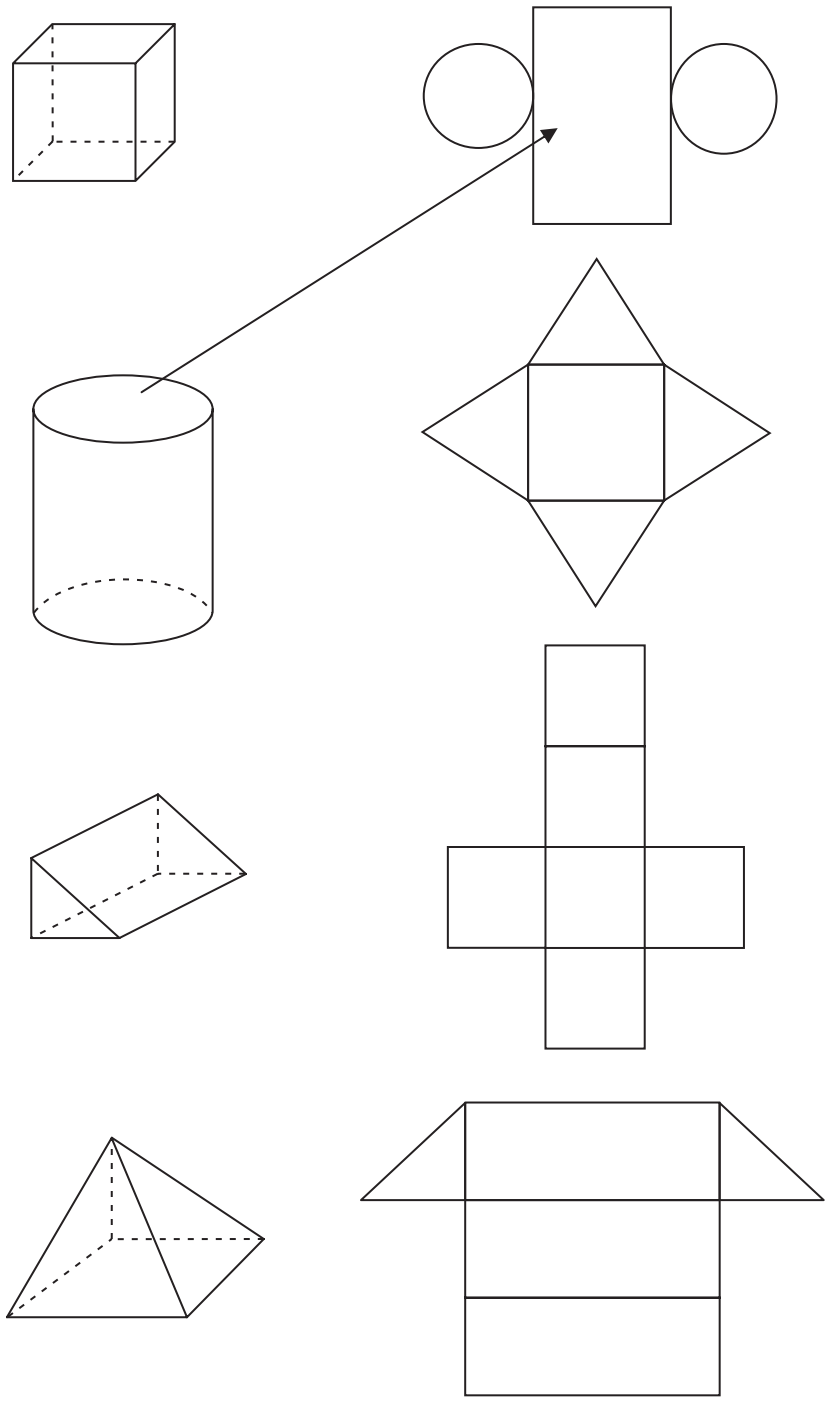
(b) What is 33 out of 50 as a percentage?

..... %
(2)

Q3

(Total 4 marks)

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)

Turn over

5. Jo thinks of a number.

She multiplies this number by 2
She then adds 12

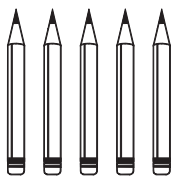
Her answer is 42

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)

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)

(Total 3 marks)

Q7

Turn over

8. Here is a sketch of a cuboid.

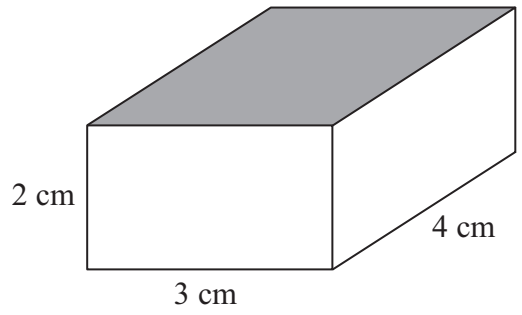
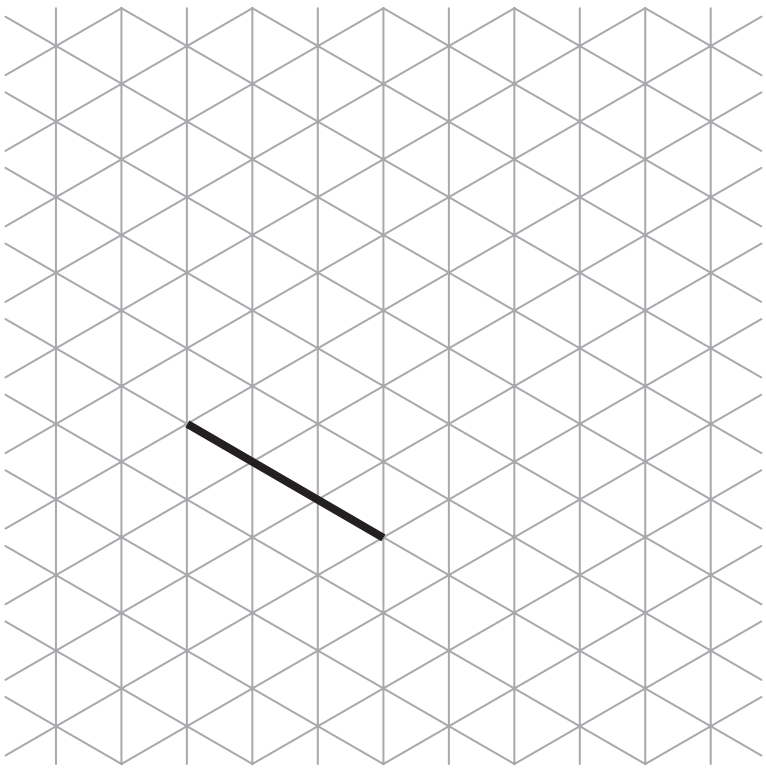


Diagram **NOT** accurately drawn

(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)

(Total 4 marks)

Q8

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

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

.....
(1)

$B = 2k + 12$

$k = 5$

(b) Work out the value of B.

$B =$ .....
(2)

$T = 4w - 2$

$T = 22$

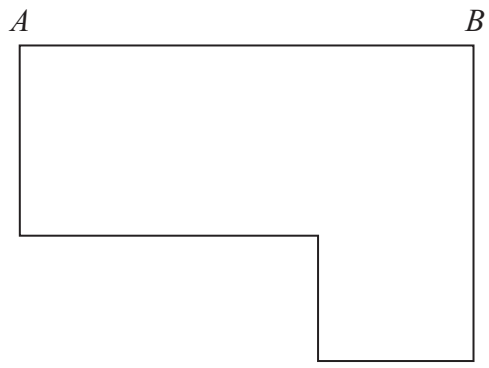
(c) Work out the value of w.

$w =$ .....
(2)

(Total 5 marks)

Q10

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

Turn over

12.

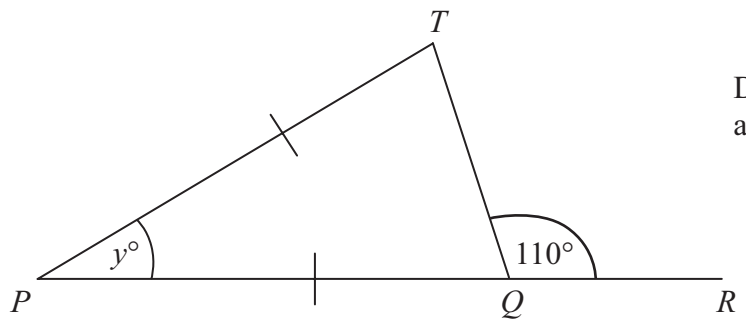


Diagram **NOT** accurately drawn

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

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

.....

(ii) Give reasons for your answer.

.....

.....

.....

(Total 4 marks)

Q12

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

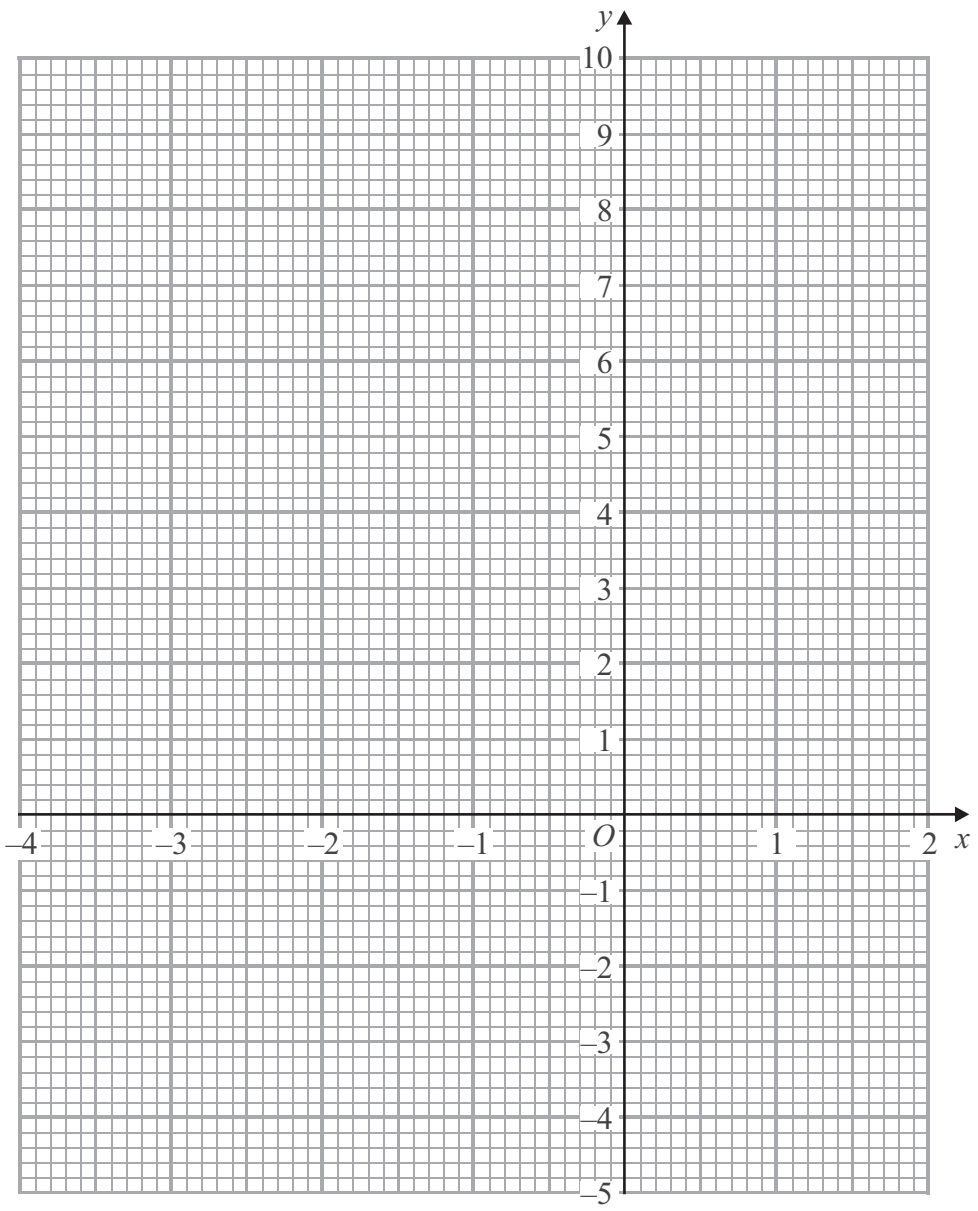
15. (a) Complete the table of values for $y = x^2 + x - 3$

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)



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

$x =$ .....

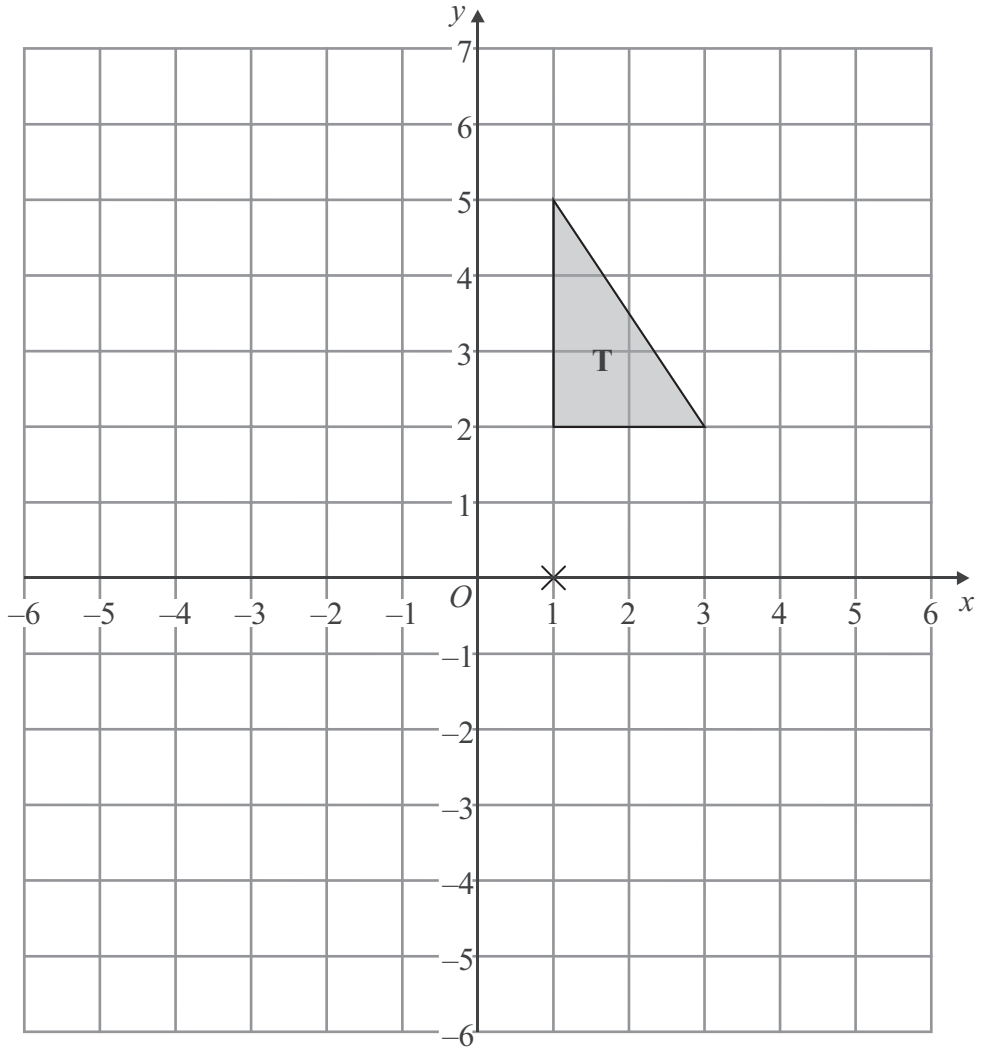
$x =$ .....

(1)

(Total 5 marks)

Q15

16.



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

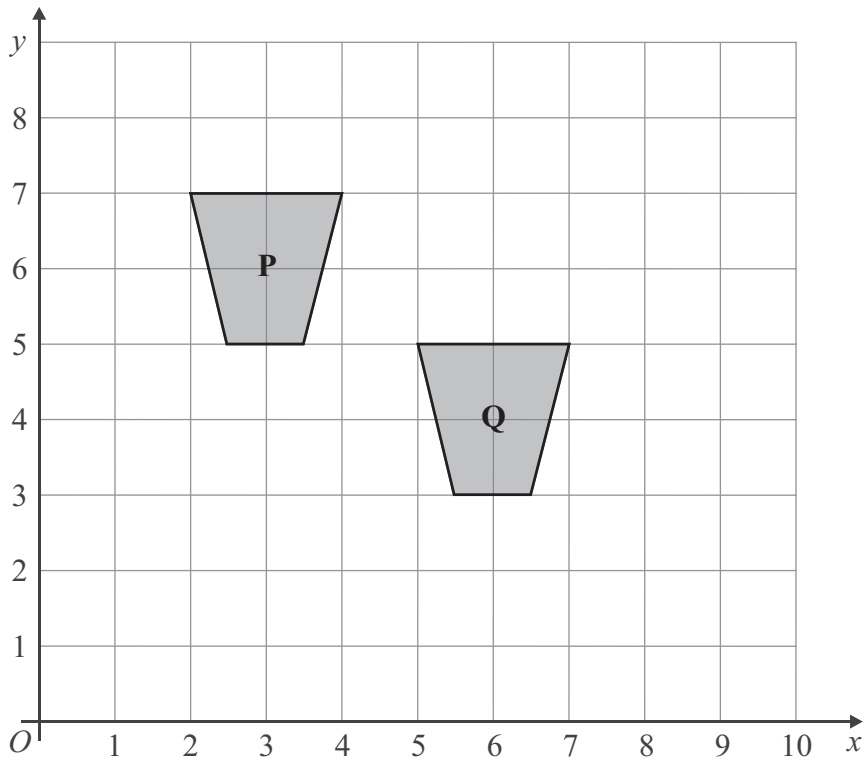
Rotate triangle **T** 180° about the point (1, 0).
Label the new triangle **A**.

Q16

(Total 2 marks)

Turn over

17.



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

.....

.....

(Total 2 marks)

Q17

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

$x =$ .....

(Total 3 marks)

Q18

TOTAL FOR PAPER: 60 MARKS

END

mock papers 4-higher

1. There are 200 children in a school.
120 of the children are boys.

What percentage of the children are boys?

..... %

(Total 2 marks)

Q1

2. $B = 2k + 12$

$k = 5$

(a) Work out the value of B.

$B =$ .....

(2)

$T = 4w - 2$

$T = 22$

(b) Work out the value of w.

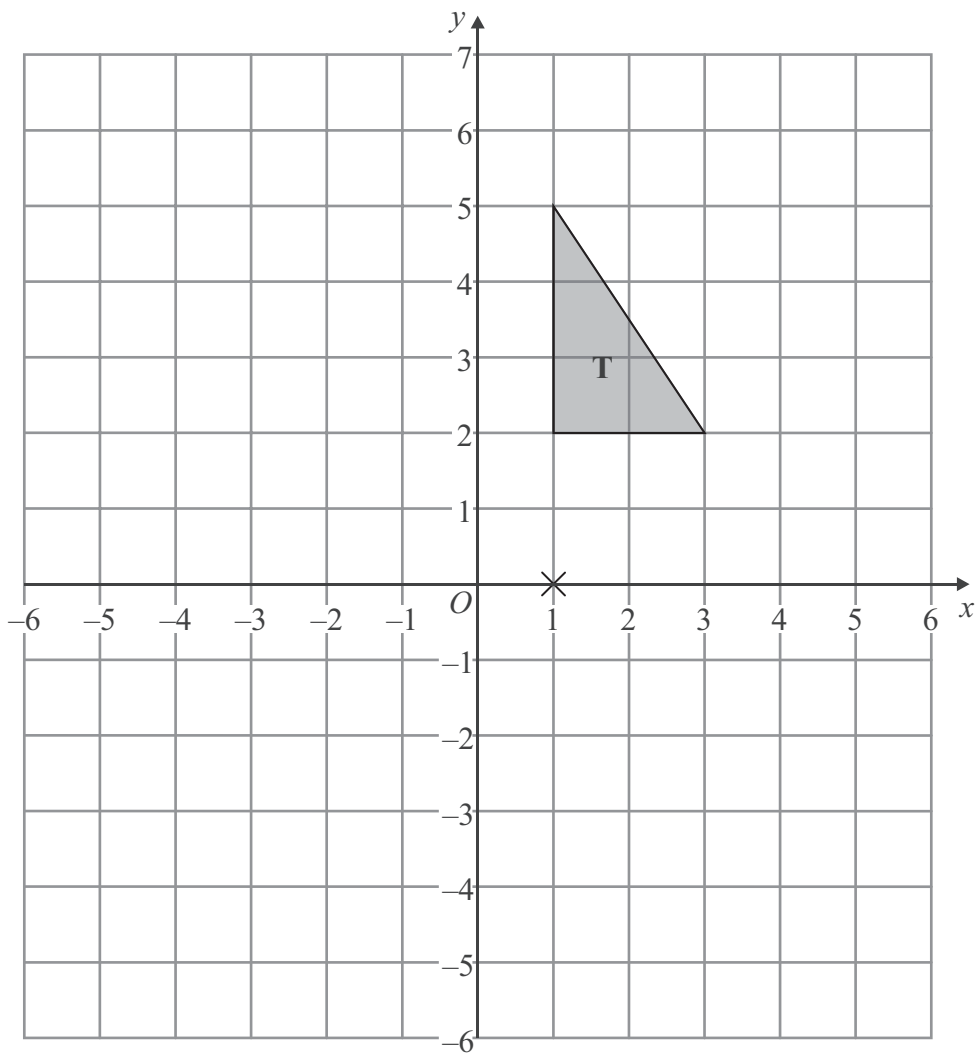
$w =$ .....

(2)

(Total 4 marks)

Q2

3.



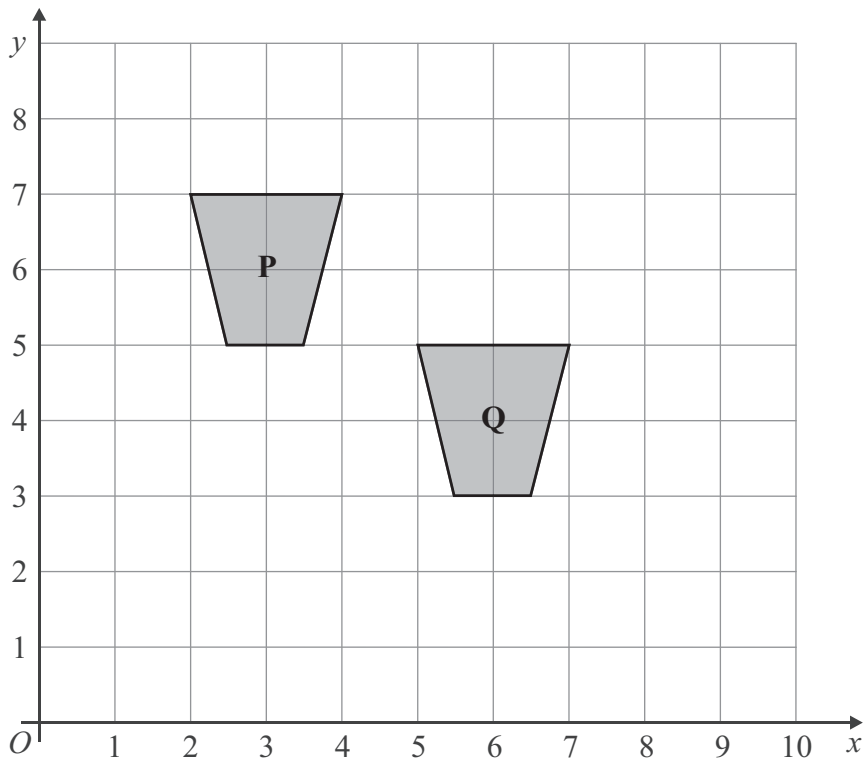
Triangle **T** has been drawn on the grid.

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

Q3

(Total 2 marks)

4.



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

.....

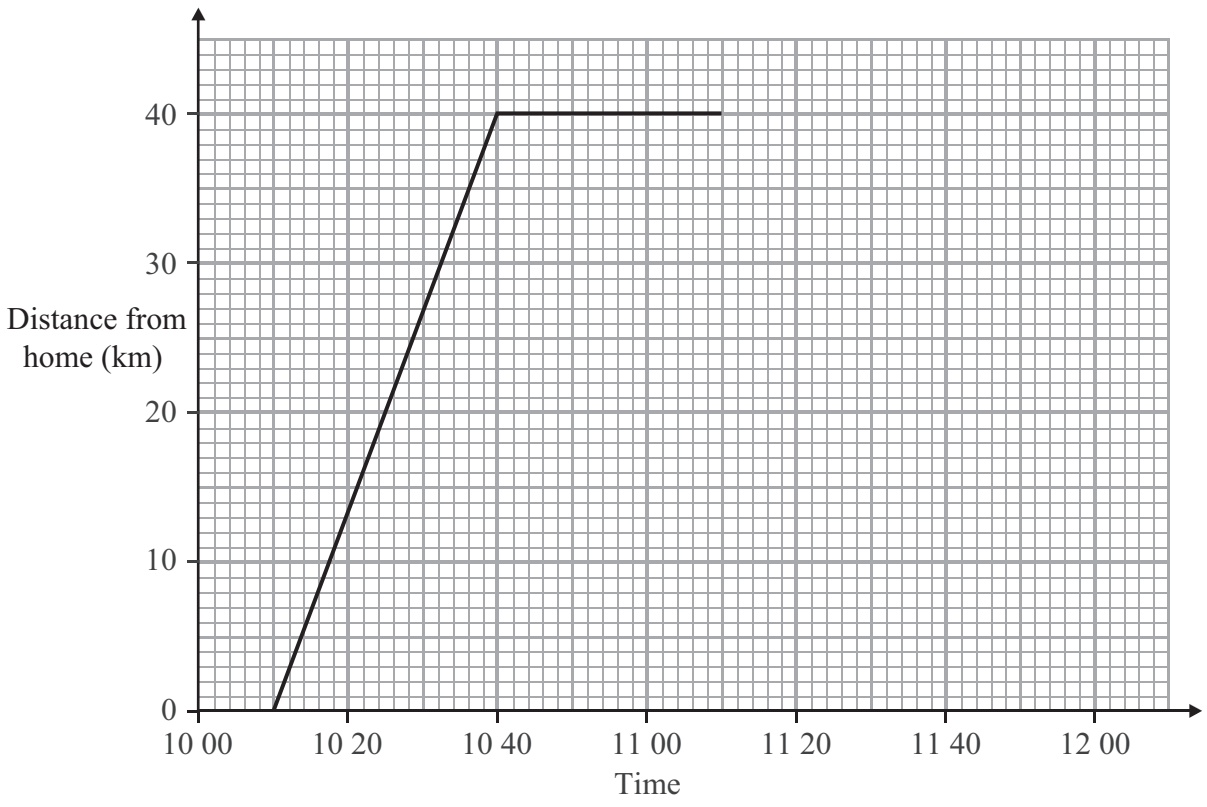
.....

(Total 2 marks)

Q4

5. Nigel travelled from his home to his friend's house 40 km away.
He stayed at his friend's house for 30 minutes.
Nigel then travelled home.

Here is part of the distance-time graph for Nigel's journey.



(a) At what time did Nigel leave home?

.....
(1)

(b) How far was Nigel from home at 10 20?

..... km
(1)

Nigel arrived home at 11 50

(c) Complete the distance-time graph.

(1)

(Total 3 marks)

Q5

6. Here is a sketch of a cuboid.

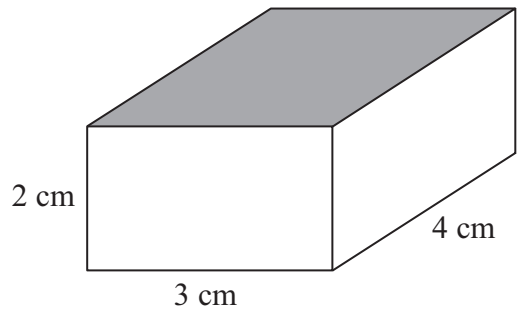
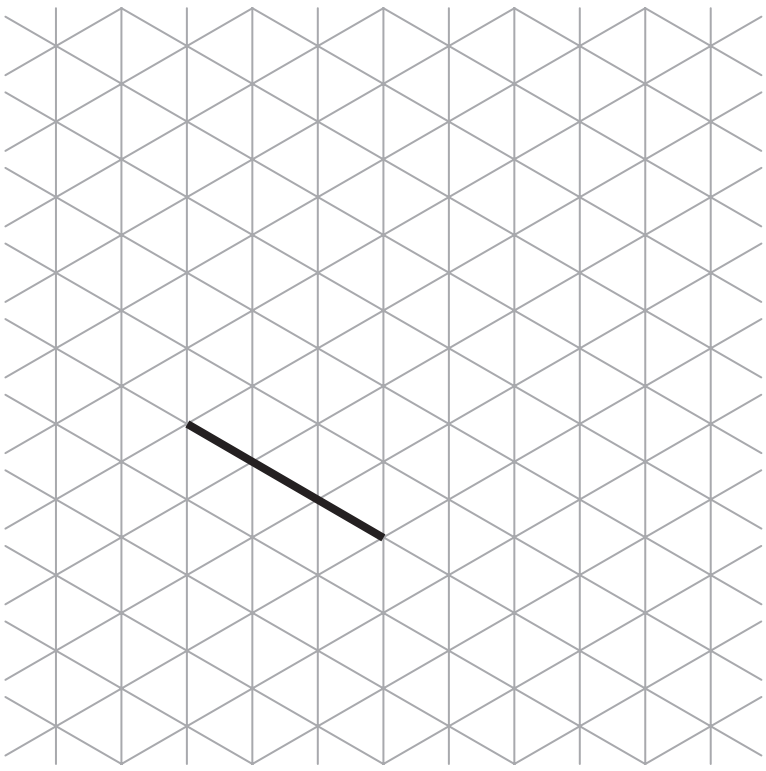


Diagram **NOT** accurately drawn

(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)

(Total 4 marks)

Q6

7.

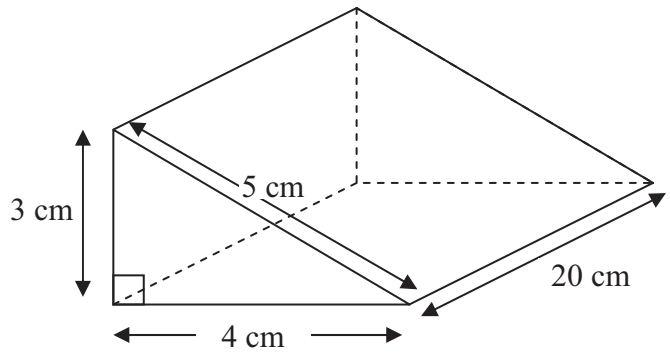


Diagram **NOT** accurately drawn

Work out the volume of the triangular prism.

..... cm^3

Q7

(Total 2 marks)

8. 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.

.....

Q8

(Total 4 marks)

9.

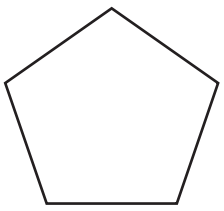


Diagram **NOT** accurately drawn

Work out the size of an exterior angle of a regular pentagon.

..... °

Q9

(Total 2 marks)

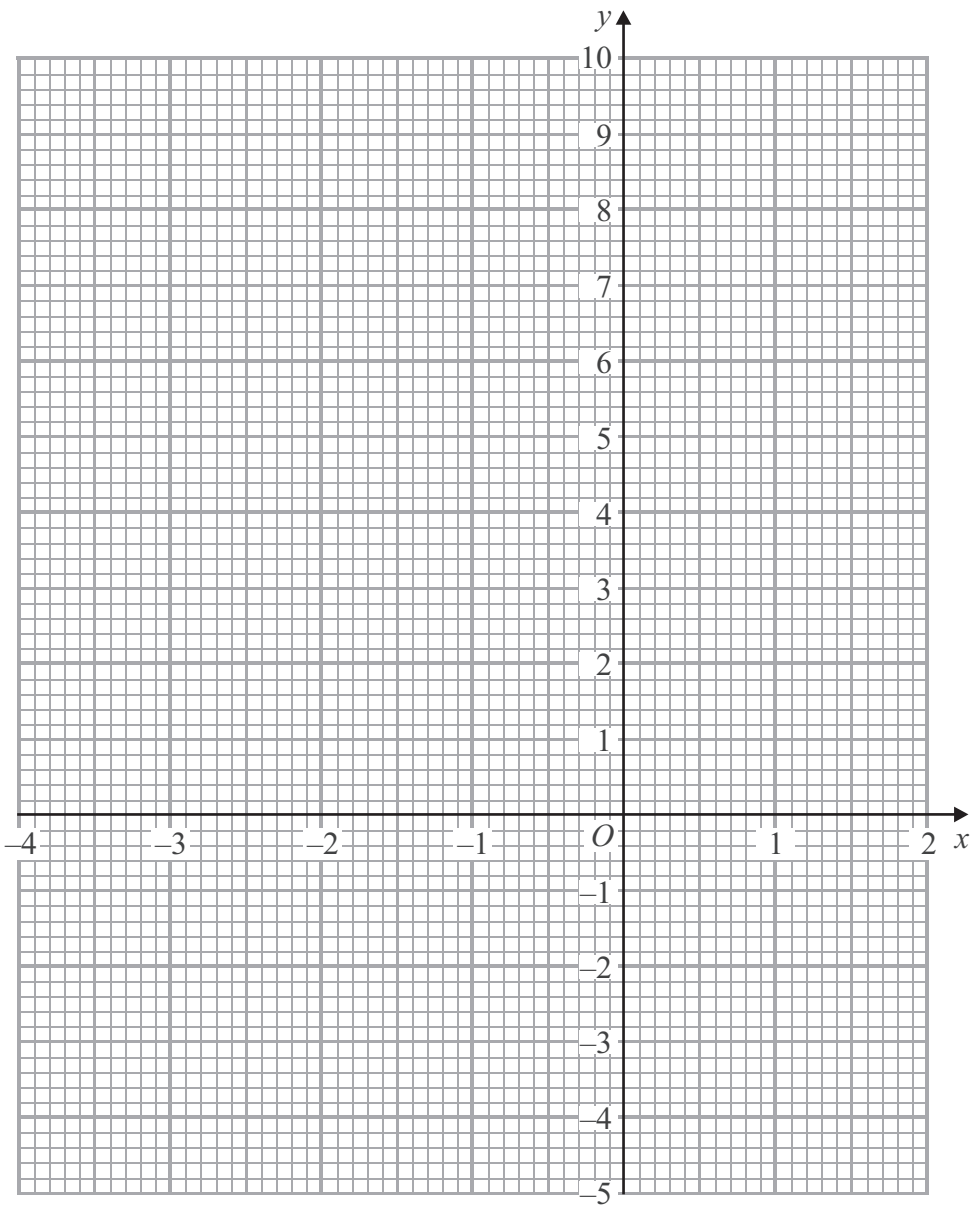
10. (a) Complete the table of values for $y = x^2 + x - 3$

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)



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

$x =$ .....

$x =$ .....

(1)

(Total 5 marks)

Q10

11. Here is a square.

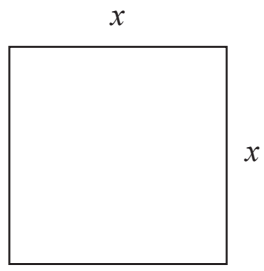


Diagram **NOT** accurately drawn

All the measurements are in centimetres.

The perimeter of the square is P cm.

(a) Express P in terms of x.

$P =$ .....

(1)

The area of the square is A cm^2.

(b) Express A in terms of P.
Give your answer in its simplest form.

$A =$ .....

(2)

(Total 3 marks)

Q11

12. Arwen buys a car for £4000
The value of the car depreciates by 10% each year.

Work out the value of the car after two years.

£ .....

(Total 3 marks)

Q12

13. (a) Here are some expressions.

a^3b	$a^2(c + b)$	$4abc$	$ab + c^3$	$4\pi c^2$

The letters a, b, and c represent lengths.
π and 4 are numbers that have no dimension.

Two of the expressions could represent volumes.
Tick the boxes (✓) underneath these two expressions.

(2)

The volume of this cube is 8 m^3.

(b) Change 8 m^3 into cm^3.

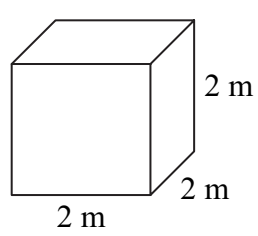


Diagram **NOT** accurately drawn

..... cm^3

(2)

(Total 4 marks)

Q13

14. Solve the simultaneous equations

$$3x + 2y = 8$$
$$2x + 5y = -2$$

$x =$ .....

$y =$ .....

Q14

(Total 4 marks)

15. A straight line passes through (0, –2) and (3, 10).

Find the equation of the straight line.

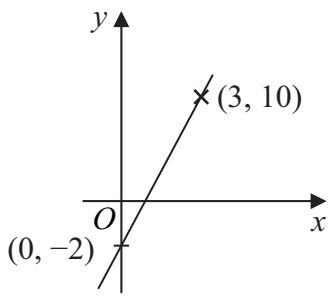


Diagram **NOT** accurately drawn

.....

Q15

(Total 3 marks)

Turn over

16. Find the value of

(i) 6^0

.....

(ii) $64^{\frac{1}{2}}$

.....

(iii) $\left(\frac{27}{8}\right)^{-\frac{2}{3}}$

.....

Q16

(Total 4 marks)

17. Solve $x^2 = 4x + 12$

.....

Q17

(Total 4 marks)

18.

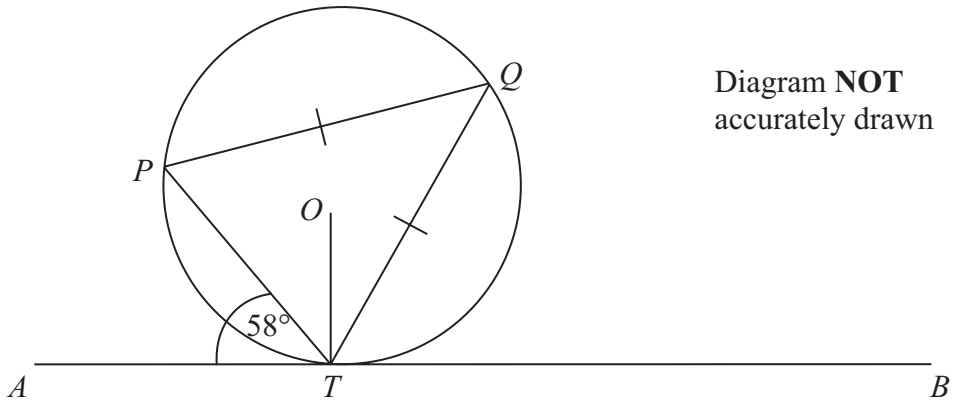


Diagram **NOT** accurately drawn

P, Q and T are points on the circumference of a circle, centre O.
The line ATB is the tangent at T to the circle.

$PQ = TQ$.
Angle $ATP = 58°$.

Calculate the size of angle OTQ.
Give a reason for each stage in your working.

..... °

Q18

(Total 5 marks)

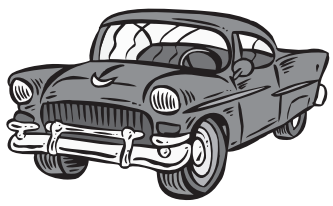
TOTAL FOR PAPER: 60 MARKS

END

mock papers 5-foundation

1. Complete this bill.

Joe's Car Shop



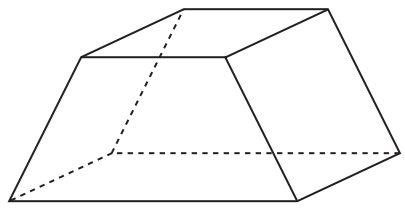
Item	Number of items	Costs of one item	Total
Spanner	2	£3.99	£7.98
De-icer	4	£1.50	£.....
Wiper blade	2	£.....	£9.00
		Total cost	£.....

Q1

(Total 3 marks)

Turn over

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

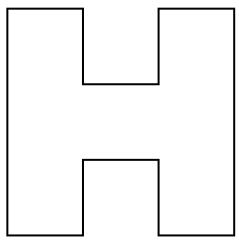
$h =$.....

(2)

Q3

(Total 4 marks)

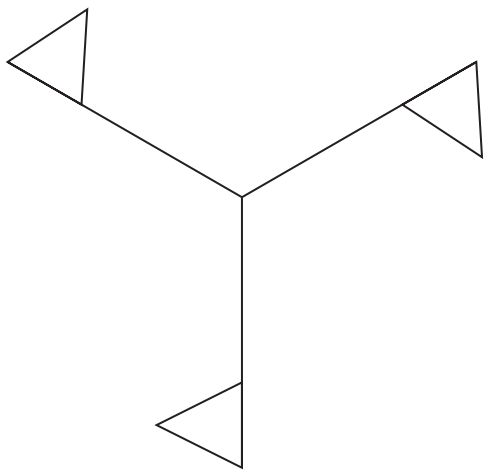
4. (a) On the shape, draw all the lines of symmetry.



(2)

The shape below has rotational symmetry.

(b) Write down the order of rotational symmetry.



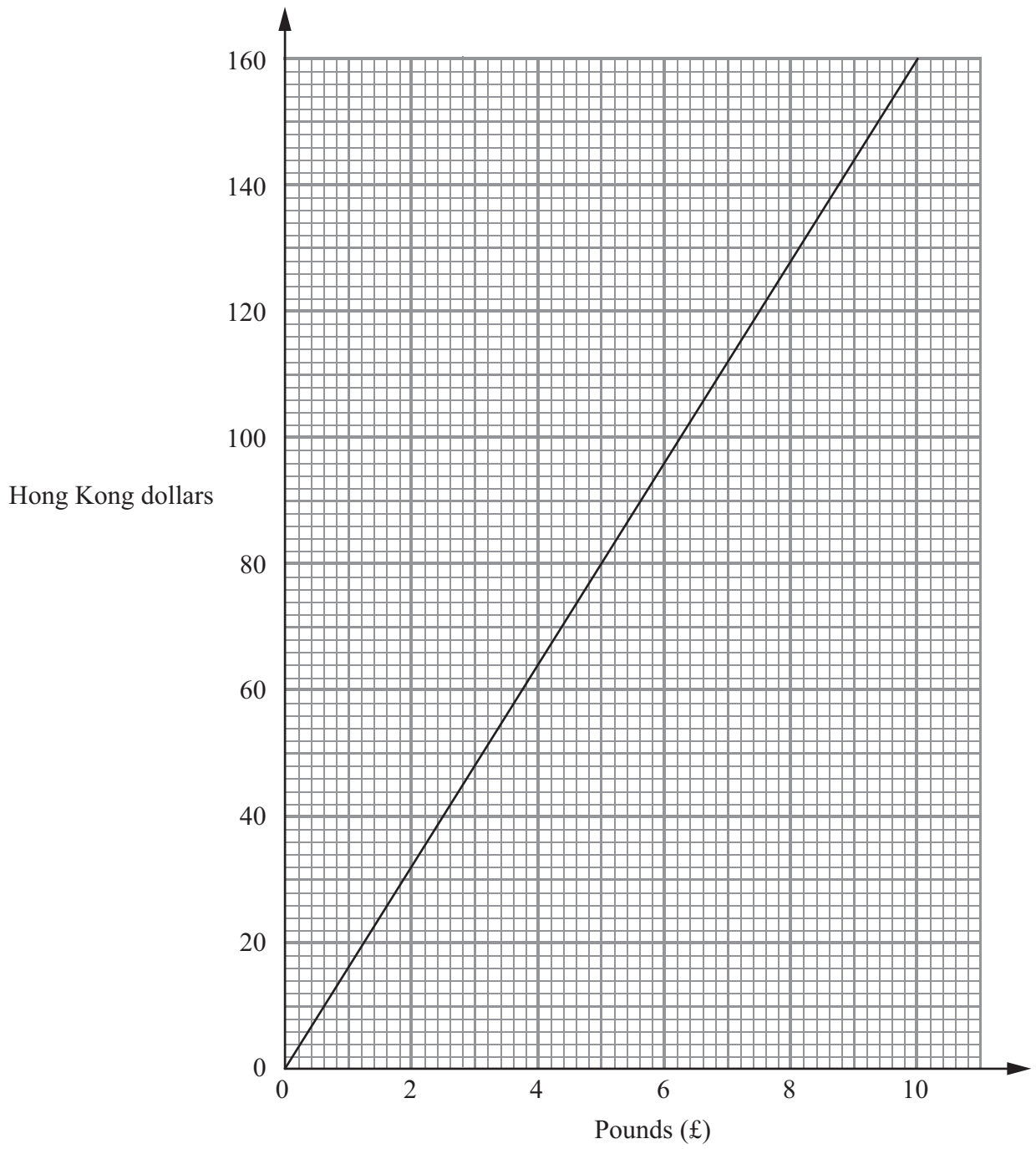
.....

(1)

Q4

(Total 3 marks)

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)

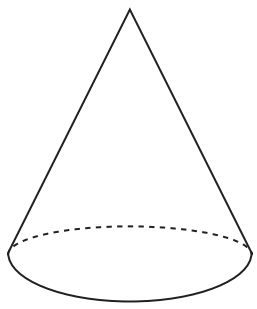
(b) Use the graph to change 120 Hong Kong dollars to pounds.

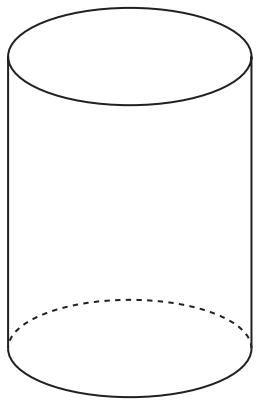
£.....
(1)

Q5

(Total 2 marks)

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)

9.

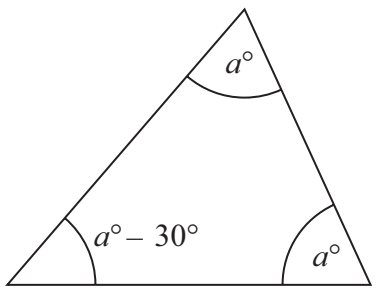


Diagram **NOT** accurately drawn

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)

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

(1)

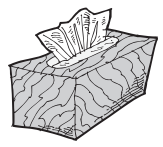
A ——————————————— B

(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)

Turn over

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

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.

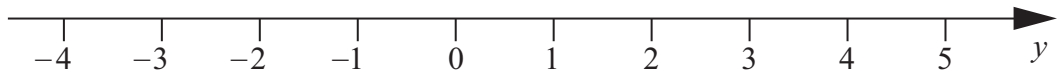
.....

(Total 3 marks)

Q15

Turn over

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 $3t + 5 > 17$

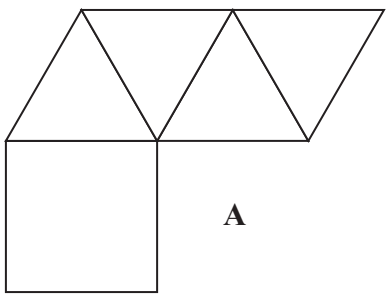
.....

(2)

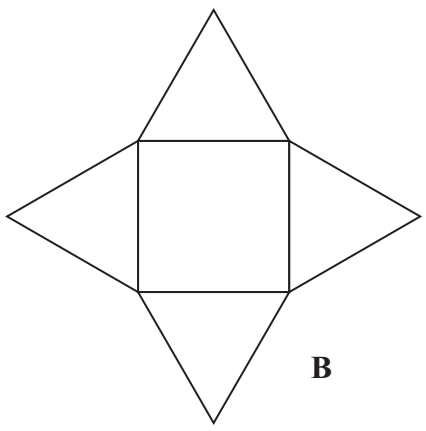
(Total 5 marks)

Q16

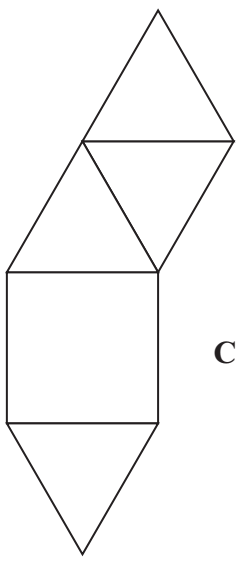
17. Here are 5 diagrams.



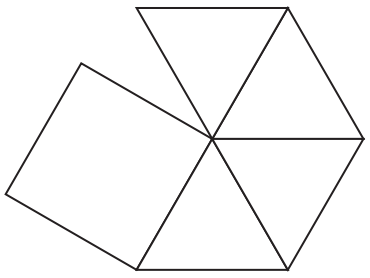
A



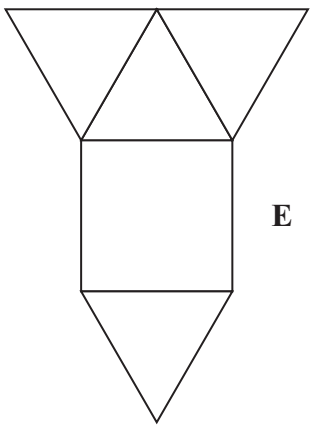
B



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

Turn over

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*.

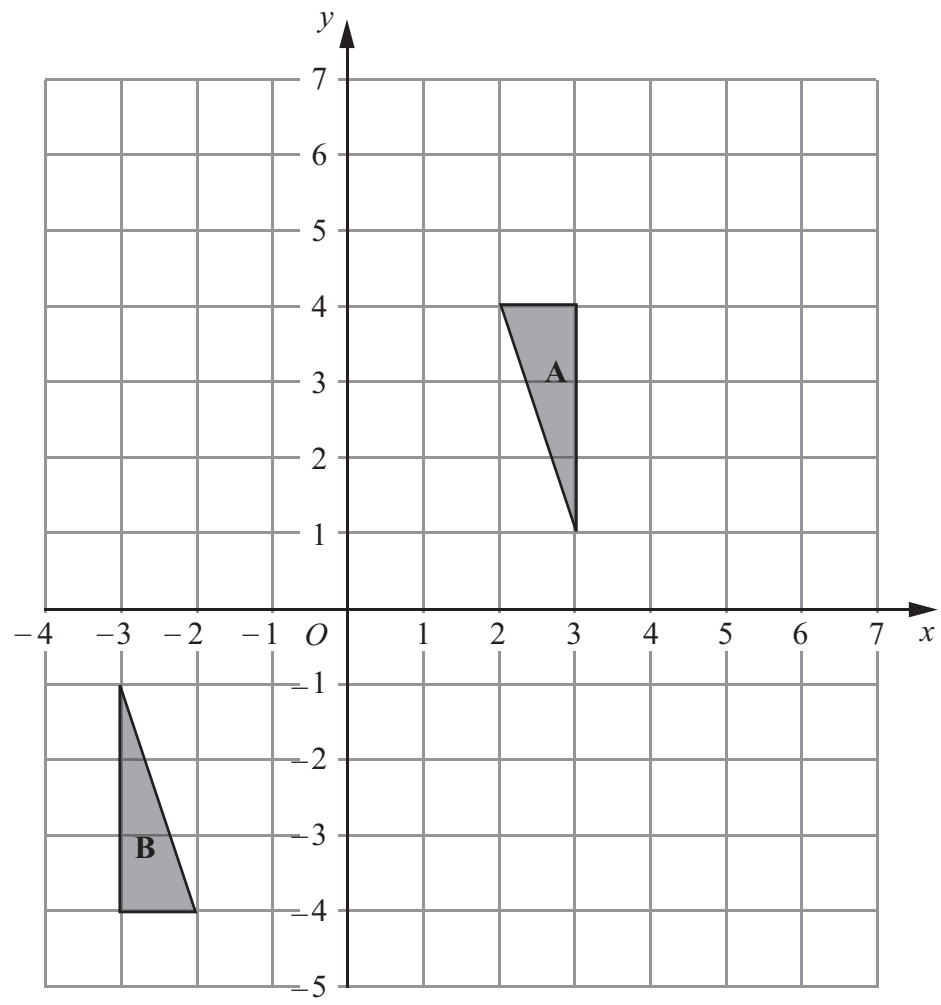
You must show all your construction lines.

A ——————————— *B*

Q20

(Total 2 marks)

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

mock papers 6-higher

1. A box contains milk chocolates and dark chocolates only.
The number of milk chocolates to the number of dark chocolates is in the ratio 2 : 1

There are 24 milk chocolates.

Work out the total number of chocolates.

.....

(Total 2 marks)

Q1

2. Steve makes a scale drawing of his school hall.

He uses a scale of 1 : 200

On the scale drawing the length of the school hall is 15 cm.

What is the real length of the school hall?

.....

(Total 2 marks)

Q2

3. Here is a sketch of a triangle.

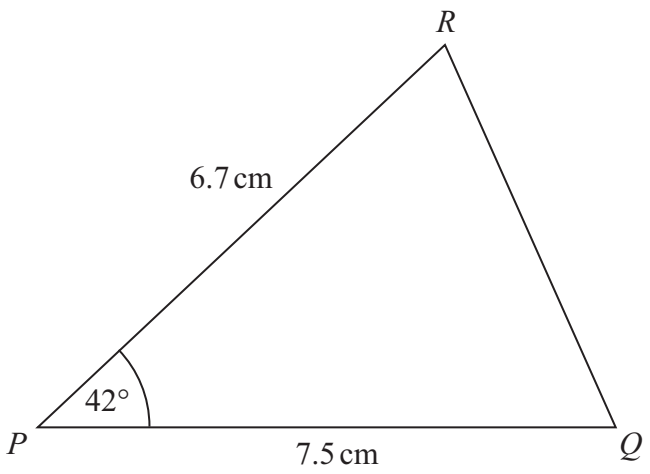


Diagram **NOT** accurately drawn

In the space below, draw an accurate diagram of triangle *PQR*.
The line *PQ* has been drawn for you.

P *Q*

Q3

(Total 2 marks)

4. Yasmin can buy 5 identical pens for 75p.

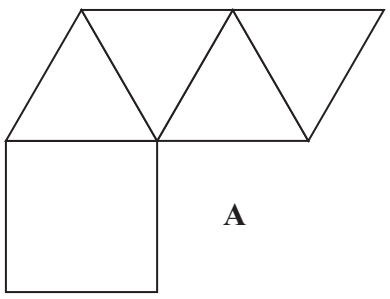
How much should she pay for 3 of these pens?

..... p

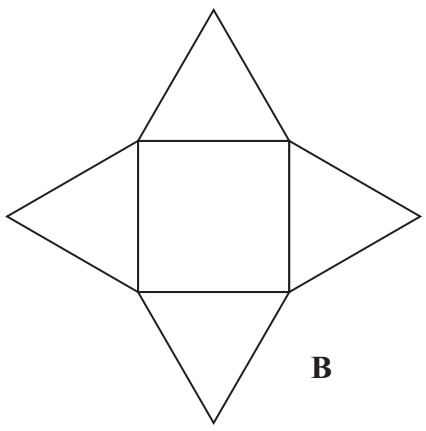
Q4

(Total 2 marks)

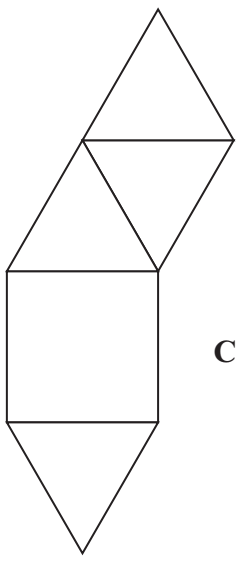
5. Here are 5 diagrams.



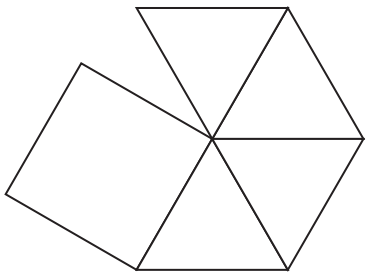
A



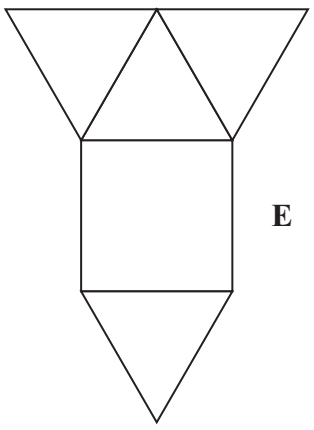
B



C



D



E

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

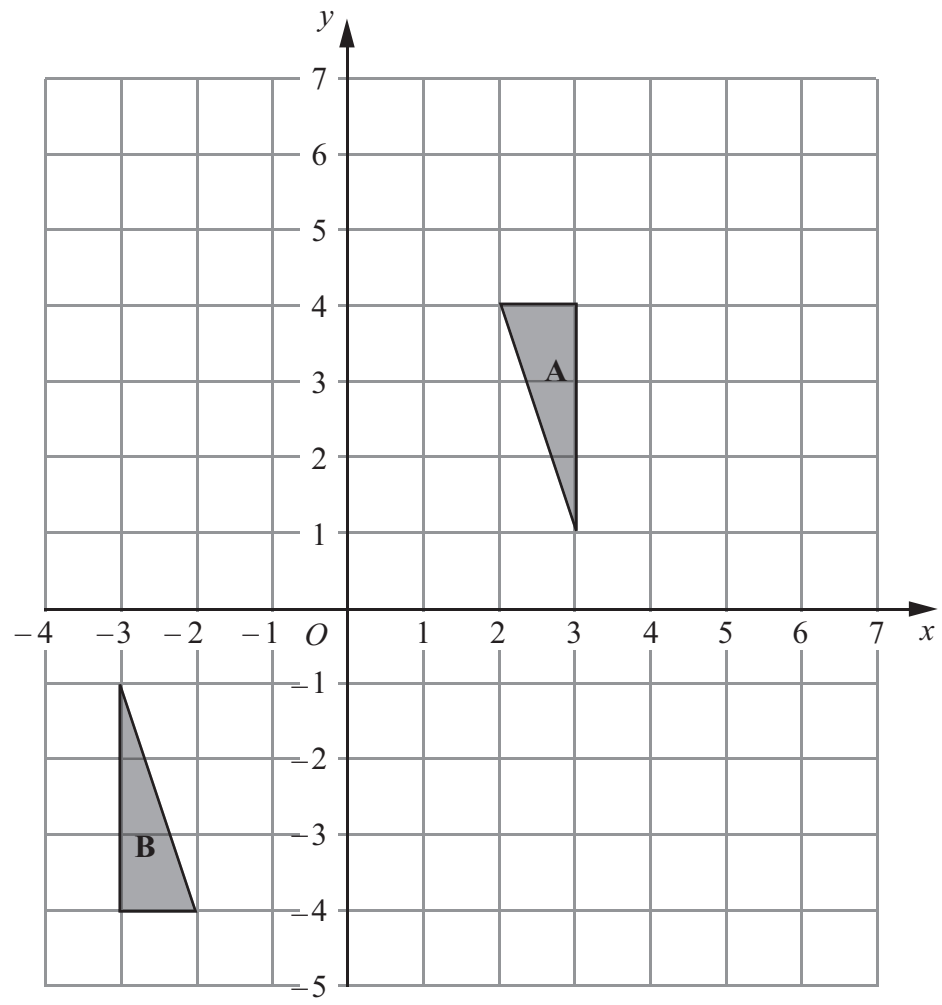
Write down the letter of each of these two diagrams.

..... and **Q5**

(Total 2 marks)

Turn over

6.



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 $\begin{pmatrix} 3 \\ 0 \end{pmatrix}$.

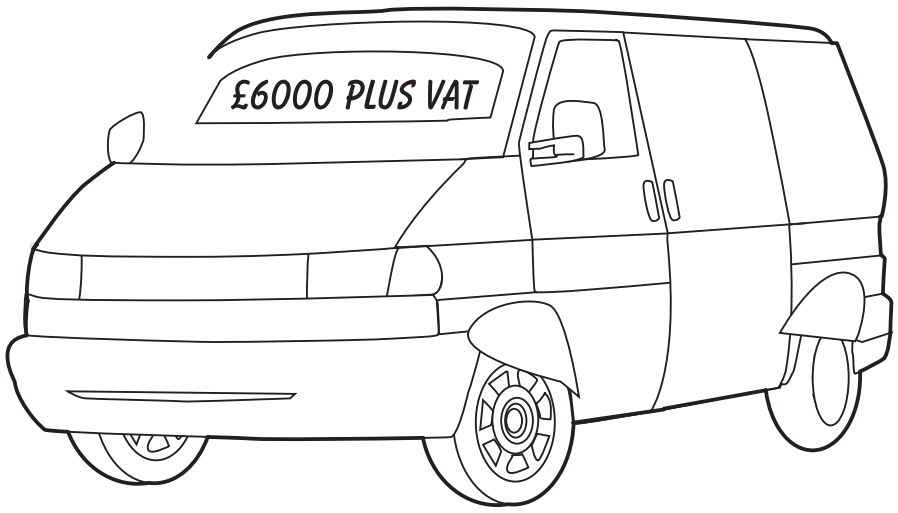
Label the new triangle **C**.

(1)

(Total 4 marks)

Q6

7. Lizzie bought a van.
The total cost of the van was £6000 **plus** VAT at $17\frac{1}{2}$ %.



Lizzie paid £3000 when she got the van.
She paid the rest of the total cost of the van in 10 equal monthly payments.

Work out the amount of each monthly payment.

£ .....

(Total 6 marks)

Q7

Turn over

8.

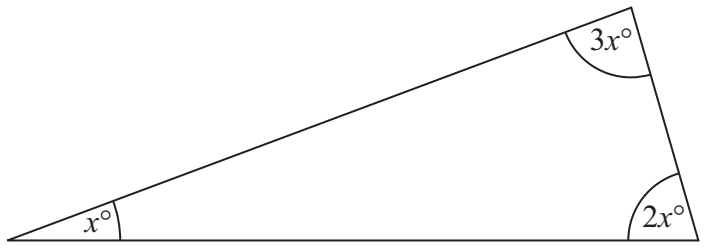


Diagram **NOT** accurately drawn

The three angles of this triangle are $x°$, $2x°$ and $3x°$.

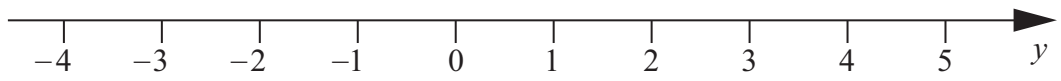
Find the size of the angle marked $x°$.

.....

(Total 2 marks)

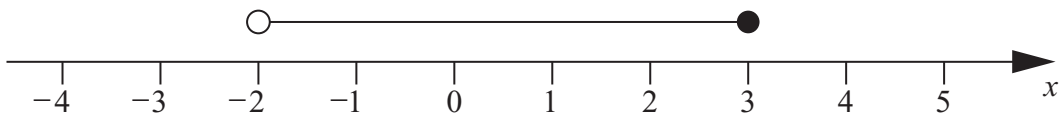
Q8

9. (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 $3t + 5 > 17$

.....

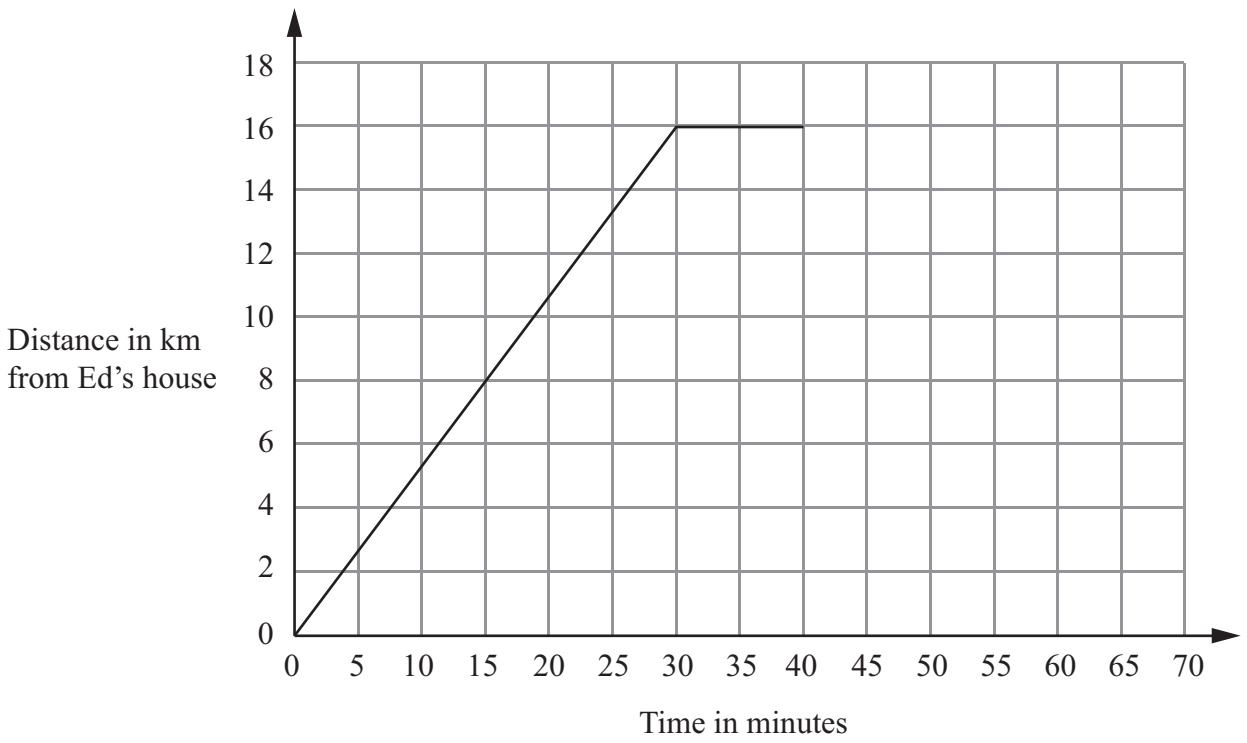
(2)

Q9

(Total 5 marks)

10. Ed went from his home to the shops and then home again.

Here is part of a travel graph for Ed's journey.



(a) Work out the average speed for the first 30 minutes of Ed's journey.

Give your answer in km per hour.

..... km per hour
(2)

Ed was at the shops for 10 minutes.
He then went home.

His journey home took 25 minutes.

(b) Complete the travel graph.

(1)

(Total 3 marks)

Q10

Turn over

11. (a) Work out $2\frac{17}{20} - 1\frac{2}{5}$

.....

(3)

(b) Work out $2\frac{2}{3} \times 1\frac{3}{4}$

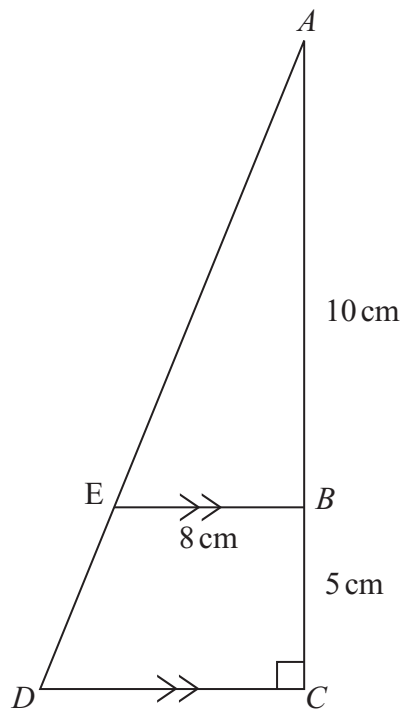
.....

(3)

Q11

(Total 6 marks)

12.



ABC and *AED* are straight lines.
EB is parallel to *DC*.
Angle *ACD* = 90°.

AB = 10 cm.
BC = 5 cm.
EB = 8 cm.

(a) Work out the length of *DC*.

.....cm
(2)

(b) Work out the area of the trapezium *EBCD*.

.....cm^2
(2)

(Total 4 marks)

Q12

Turn over

13. Solve the simultaneous equations

$$6x + 2y = -3$$
$$4x - 3y = 11$$

$x =$ ....., $y =$ .....

(Total 4 marks)

Q13

14. Solve $x^2 + 8x - 9 = 0$

.....

(Total 3 marks)

Q14

15. P is inversely proportional to V.

When $V = 8$, $P = 5$

(a) Find a formula for P in terms of V.

$P =$ .....

(3)

(b) Calculate the value of P when $V = 2$

.....

(1)

Q15

(Total 4 marks)

16.

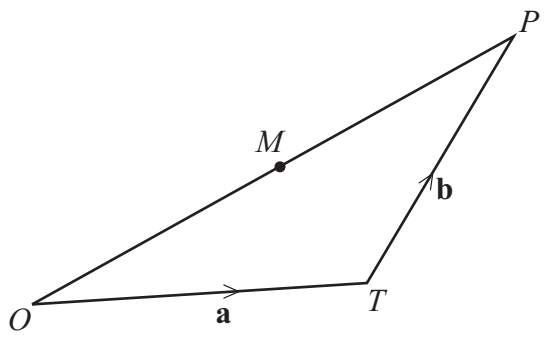


Diagram **NOT** accurately drawn

OPT is a triangle.
M is the midpoint of *OP*.

$\overrightarrow{OT} = \mathbf{a}$

$\overrightarrow{TP} = \mathbf{b}$

(a) Express $\overrightarrow{OM}$ in terms of **a** and **b**.

$\overrightarrow{OM}$ = ...

(2)

(b) Express $\overrightarrow{TM}$ in terms of **a** and **b**.
Give your answer in its simplest form.

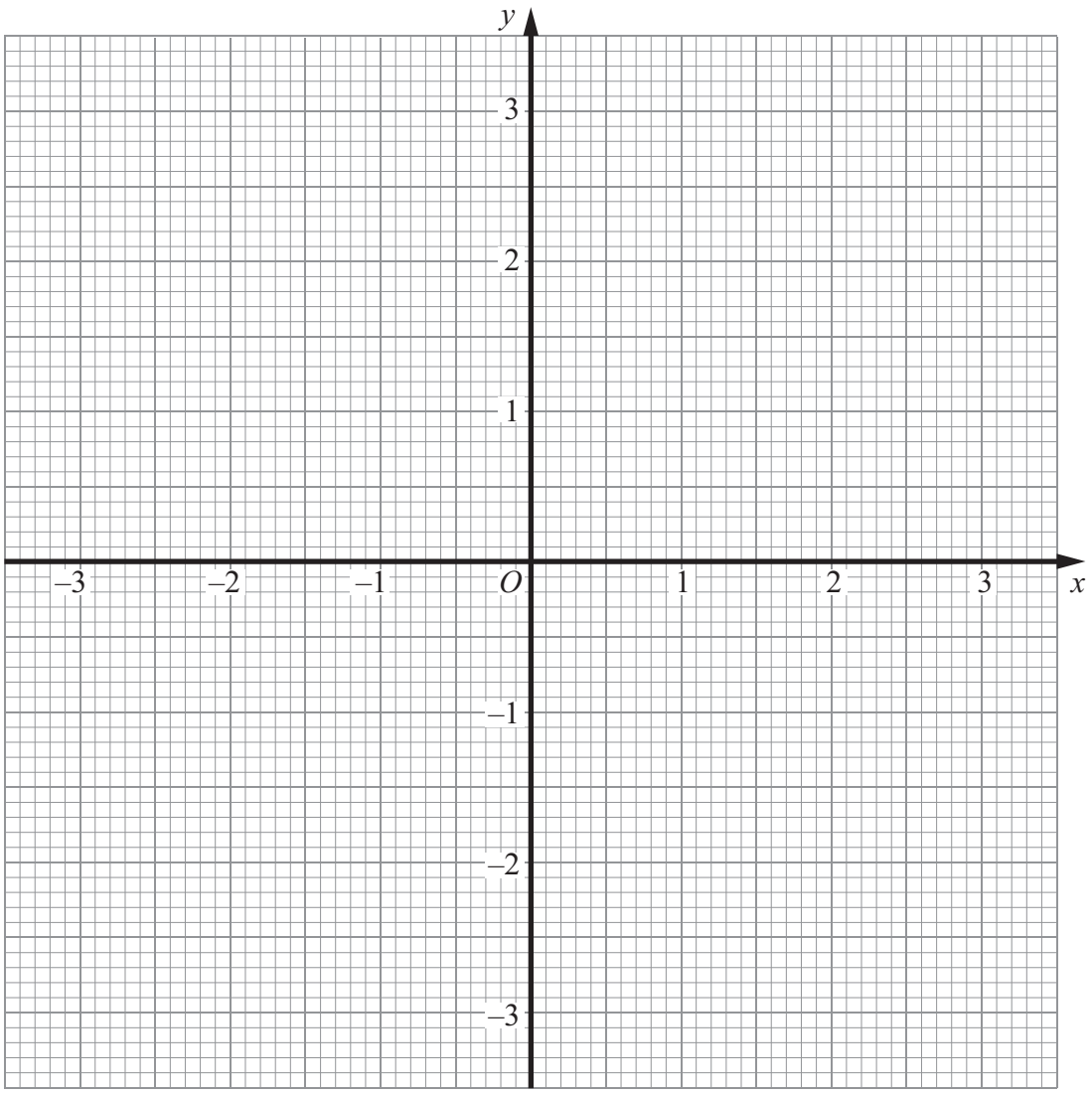
$\overrightarrow{TM}$ = ...

(2)

(Total 4 marks)

Q16

17. (a) Construct the graph of $x^2 + y^2 = 9$



(2)

(b) By drawing the line $x + y = 1$ on the grid, solve the equations

$x^2 + y^2 = 9$
$x + y = 1$

$x =$ ..... , $y =$ .....

or $x =$ ..... , $y =$ .....

(3)

(Total 5 marks)

Q17

TOTAL FOR PAPER: 60 MARKS

END