

Write your name here

Surname

Other names

Pearson
Edexcel GCSE

Centre Number

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Candidate Number

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Mathematics B

Unit 3: Number, Algebra, Geometry 2 (Calculator)

Foundation Tier

Tuesday 17 June 2014 – Morning

Time: 1 hour 30 minutes

Paper Reference

5MB3F/01

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, calculator. Tracing paper may be used.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided – *there may be more space than you need.*
- **Calculators may be used.**
- If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.



Information

- The total mark for this paper is 80
- The marks for **each** question are shown in brackets – *use this as a guide as to how much time to spend on each question.*
- Questions labelled with an **asterisk** (*) are ones where the quality of your written communication will be assessed.

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ►

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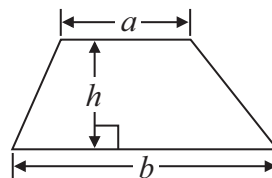
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GCSE Mathematics 2MB01

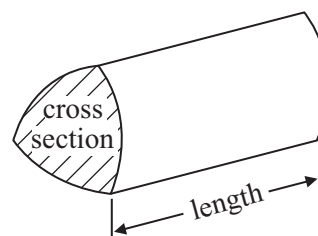
Formulae: Foundation Tier

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

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



$$\text{Volume of prism} = \text{area of cross section} \times \text{length}$$



Answer ALL questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

1 Ann and Ben each have 20 cards.

Ann gives 5 of her cards to Ben.

Ben gives 8 of his cards to Ann.

How many cards does each person have now?

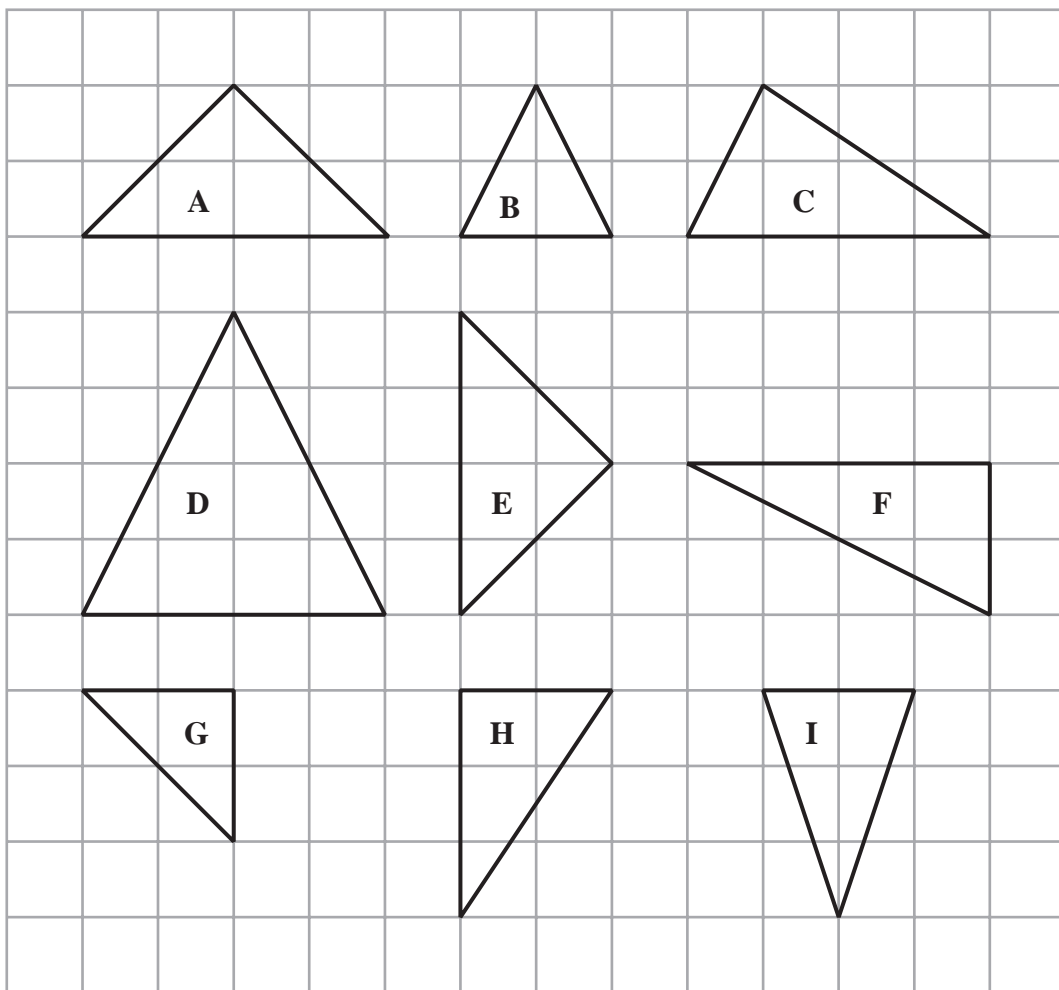
Ann

Ben

(Total for Question 1 is 3 marks)



2 Here are some triangles drawn on a grid.



Two of these triangles are congruent.

(a) Write down the letters of these triangles.

..... and
(1)

One of the triangles is similar to triangle **B**.

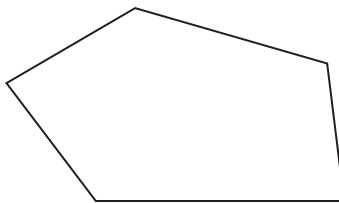
(b) Write down the letter of this triangle.

.....
(1)

(Total for Question 2 is 2 marks)



3 Here is a polygon.



(a) Write down the mathematical name of the polygon.

.....
(1)

(b) Draw a sketch of a hexagon.

(1)

(c) In the space below, draw accurately a rectangle with a length of 5 cm and a width of 3 cm.

(2)

(Total for Question 3 is 4 marks)



- 4 Sarah and Greta were in a diving competition.

Here are the scores for each girl's three dives.

Sarah 8.8 9.0 9.3

Greta 9.0 9.0 9.0

Who got the higher total score, Sarah or Greta?
You must show your working.

.....
(Total for Question 4 is 2 marks)

- 5 Howard is going to paint a wall.
He needs to buy some tins of paint.

The area of the wall is 58 m^2 .

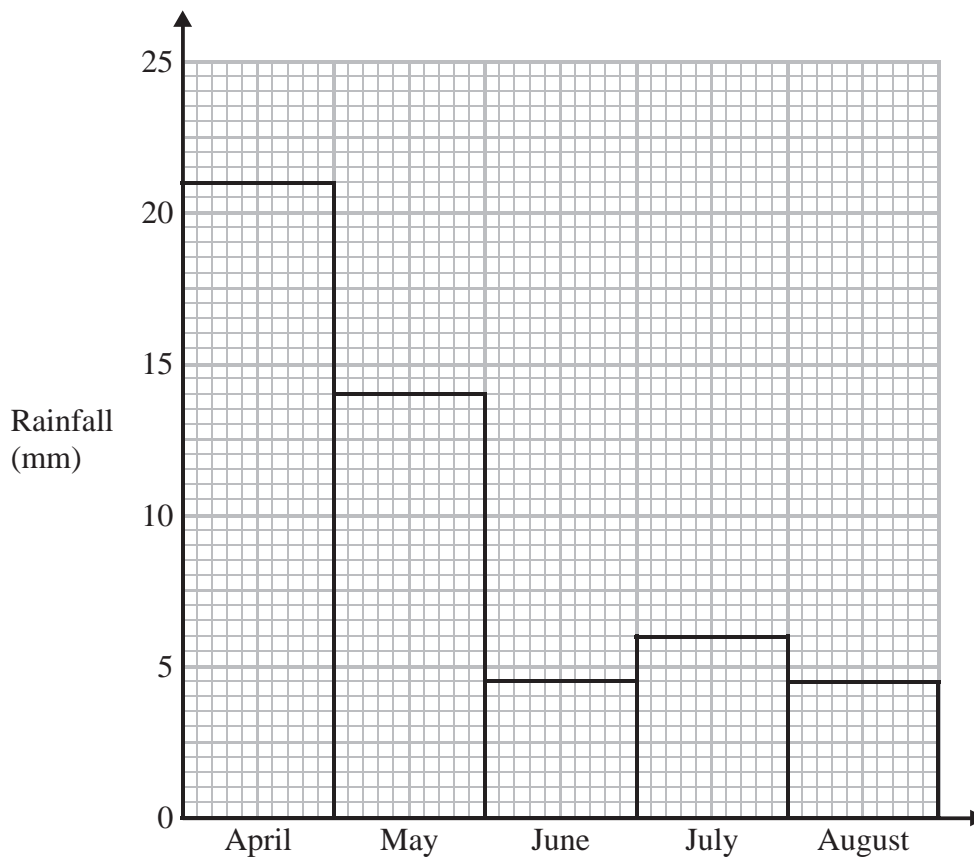
Each tin of paint will cover an area of 12 m^2 .

Work out the smallest number of tins of paint Howard needs to buy.

.....
(Total for Question 5 is 2 marks)



6 The diagram shows information about the total rainfall, in mm, in Fenwick for each of 5 months.



(a) Which month had the highest total rainfall?

.....
(1)

Two months had the same total rainfall.

(b) Which two months?

..... and
(1)

(c) Work out the difference between the total rainfall in May and in July.

..... mm
(2)

(Total for Question 6 is 4 marks)



7 138 people are going on a school trip.
Each person will travel by coach or by minibus.

Steve gets 3 coaches for the trip.
Each coach has seats for 35 passengers.

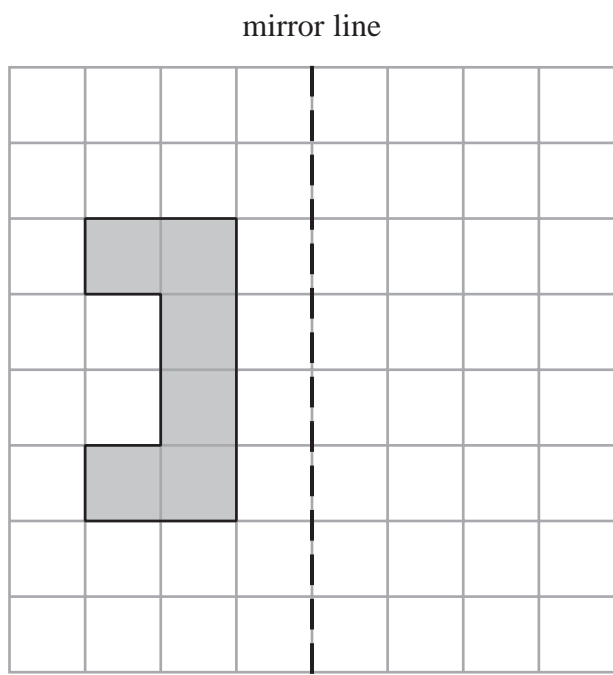
Steve also needs some minibuses for the trip.
Each minibus has seats for 10 passengers.

Work out the smallest number of minibuses Steve needs.

.....
(Total for Question 7 is 3 marks)



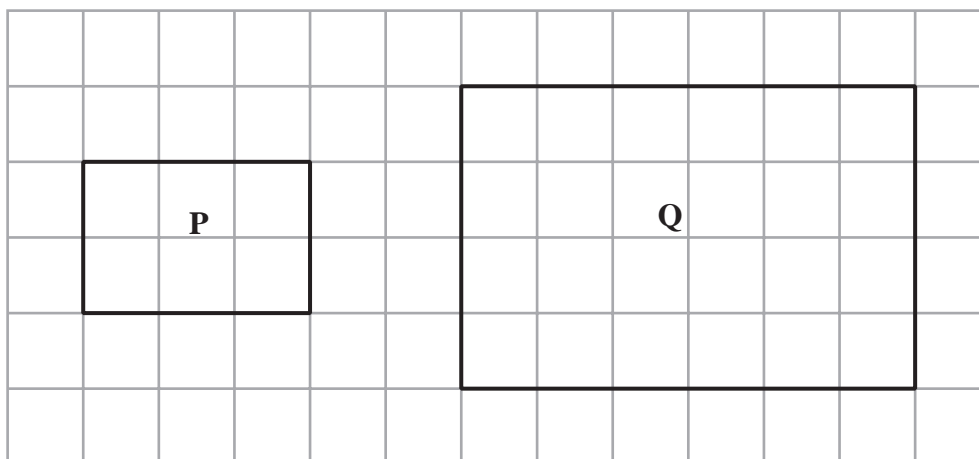
8 A shaded shape is shown on the grid.



(a) Reflect the shape in the mirror line.

(2)

Here are two rectangles.



Rectangle **Q** is an enlargement of rectangle **P**.

(b) Work out the scale factor of the enlargement.

.....
(1)

(Total for Question 8 is 3 marks)



9 Kimona is going to cook some meat.

She uses this rule to work out the cooking time in minutes.

$$\text{cooking time in minutes} = \text{weight of meat in kg} \times 40 \text{ and then add } 15$$

Kimona wants to finish cooking the meat at 1 pm.

The weight of the meat is 1.5 kg.

Work out the latest time Kimona can start to cook the meat.

.....
(Total for Question 9 is 3 marks)

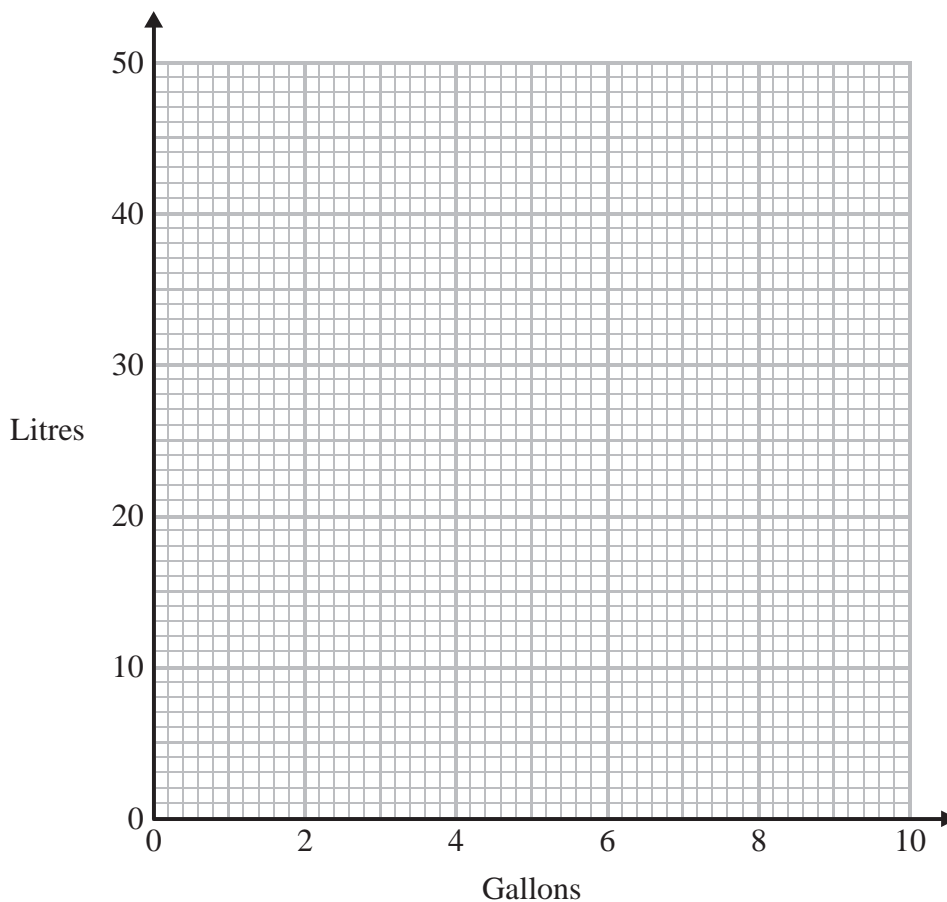


10 Josh changed some volumes measured in gallons to litres.

The table shows his results.

gallons	0	2	4	6	8
litres	0	9	18	27	36

(a) On the grid, use this information to draw a line graph that can be used to change between gallons and litres.



(2)

(b) Use your line graph to change 5 gallons to litres.

..... litres
(1)

(c) Use your line graph to change 33 litres to gallons.

..... gallons
(1)

(Total for Question 10 is 4 marks)



11 (a) Work out $+8 - 6$

.....
(1)

(b) Work out $-5 - 4$

.....
(1)

(c) Work out $-12 \div +4$

.....
(1)

(Total for Question 11 is 3 marks)

12 $P = n + 2t$

$$n = 4$$

$$t = 5$$

Work out the value of P .

$P =$

(Total for Question 12 is 2 marks)



13 The information in the table can be used to change between Euros (€) and Pounds (£).

Pounds (£)	10	20	100	400
Euros (€)	12.50	25	125	500

(a) Change £25 to Euros.

€.....
(2)

In France a coat costs €100

In England an identical coat costs £90

*(b) In which country is the coat cheaper?

(3)

(Total for Question 13 is 5 marks)



14 (a) Solve $2x = 8$

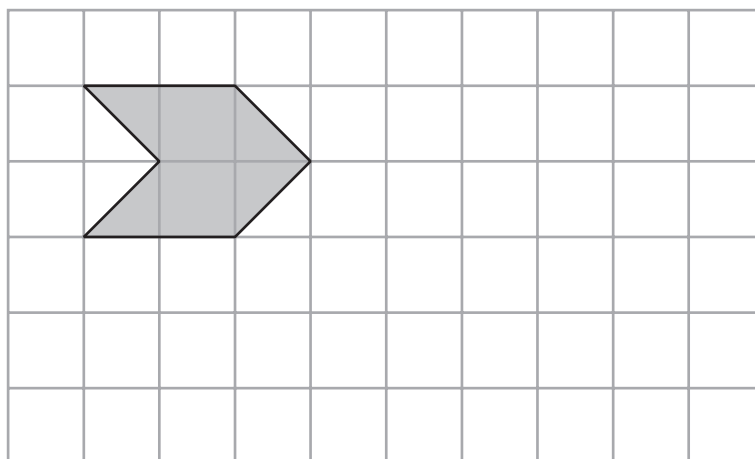
.....
(1)

(b) Solve $y + 4 = 10$

.....
(1)

(Total for Question 14 is 2 marks)

15 On the grid, show how this shape will tessellate.
You should draw at least 6 shapes.



(Total for Question 15 is 2 marks)



16 The diagram shows part of a map.



(a) Find the bearing of the church from the tower.

.....
(1)

The scale of the map is 1 cm represents 2.5 km.

(b) Work out the real distance between the tower and the church.

..... km
(2)

A school is 15 km due North of the church.

(c) On the diagram, mark with a cross (X) the position of the school.
Label your cross S.

(2)

(Total for Question 16 is 5 marks)



17 Fadiq is going to make some dresses.
She needs 675 centimetres of thread for each dress.

Fadiq wants to make 8 dresses.
She has 50 metres of thread.

Does Fadiq have enough thread for the 8 dresses?
You must show how you got your answer.

(Total for Question 17 is 3 marks)



***18** Here is information about two investments.

Investment A Invest £2400 for 3 years and get £8 each month.

Investment B Invest £2400 for 3 years at a rate of 3.5% per year simple interest.

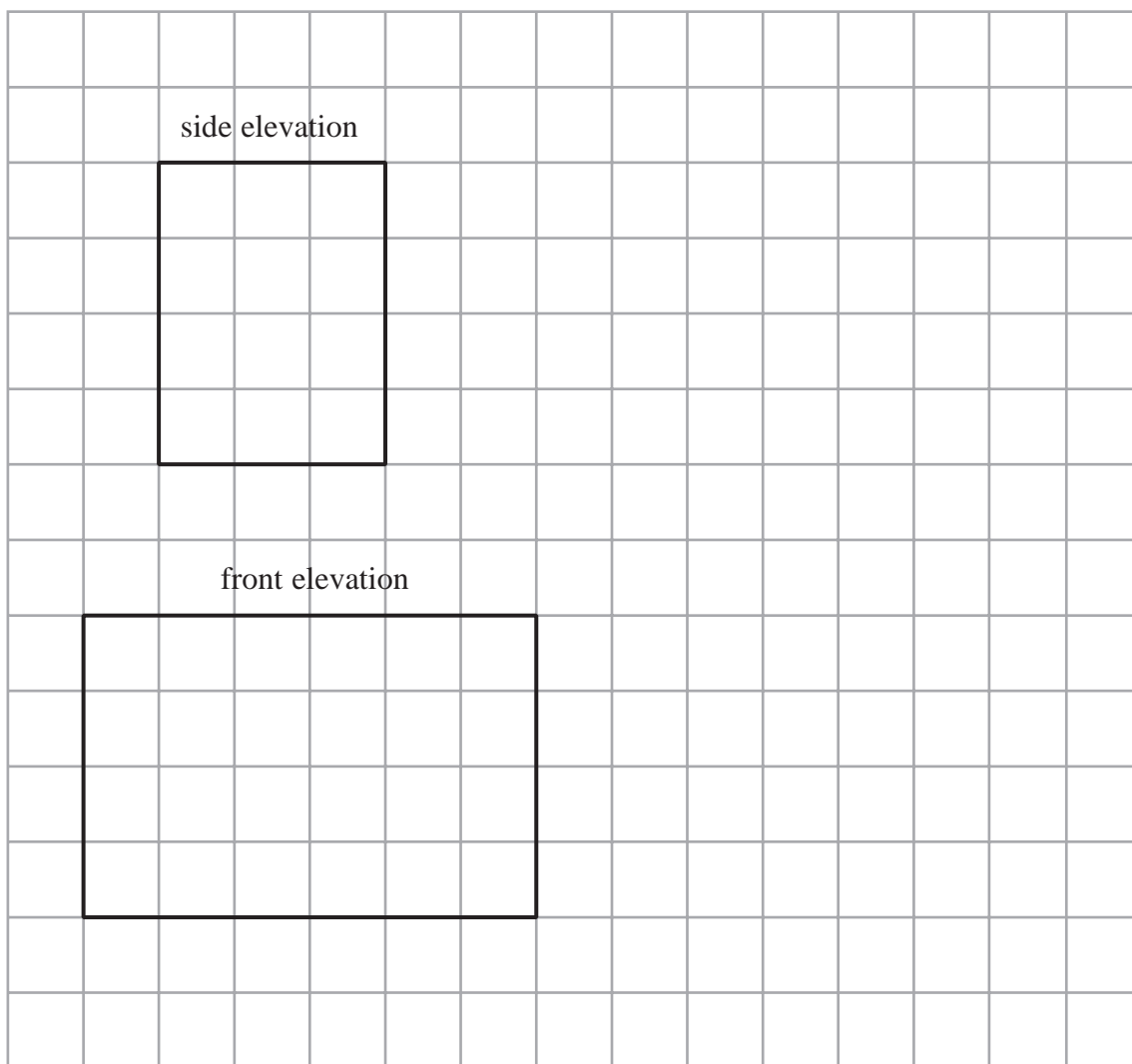
Which is the better investment?

You must show your working.

(Total for Question 18 is 5 marks)



19 The side elevation and the front elevation of a cuboid are drawn on the centimetre grid.



On the grid, draw an accurate plan of the cuboid.

(Total for Question 19 is 2 marks)



20 Glen buys four tickets for a concert.
Each ticket costs £54

Glen also has to pay a booking fee.
The booking fee is 5% of the total price of the tickets.

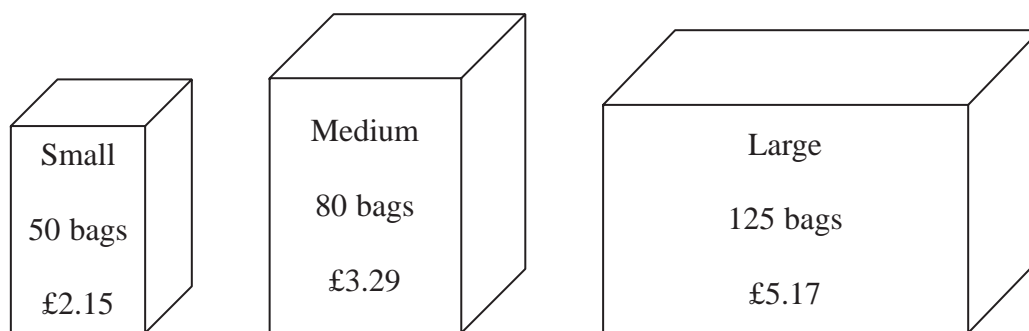
Work out the total amount Glen has to pay.

£.....

(Total for Question 20 is 3 marks)



*21 Tea bags are sold in three sizes of box.



A small box of 50 tea bags costs £2.15

A medium box of 80 tea bags costs £3.29

A large box of 125 tea bags costs £5.17

Which size of box is the best value for money?

(Total for Question 21 is 4 marks)



- 22** Stephanie is x years old.
Tobi is twice as old as Stephanie.
Ulrika is 3 years younger than Tobi.
The sum of all their ages is 52 years.

(a) Show that $5x - 3 = 52$

(3)

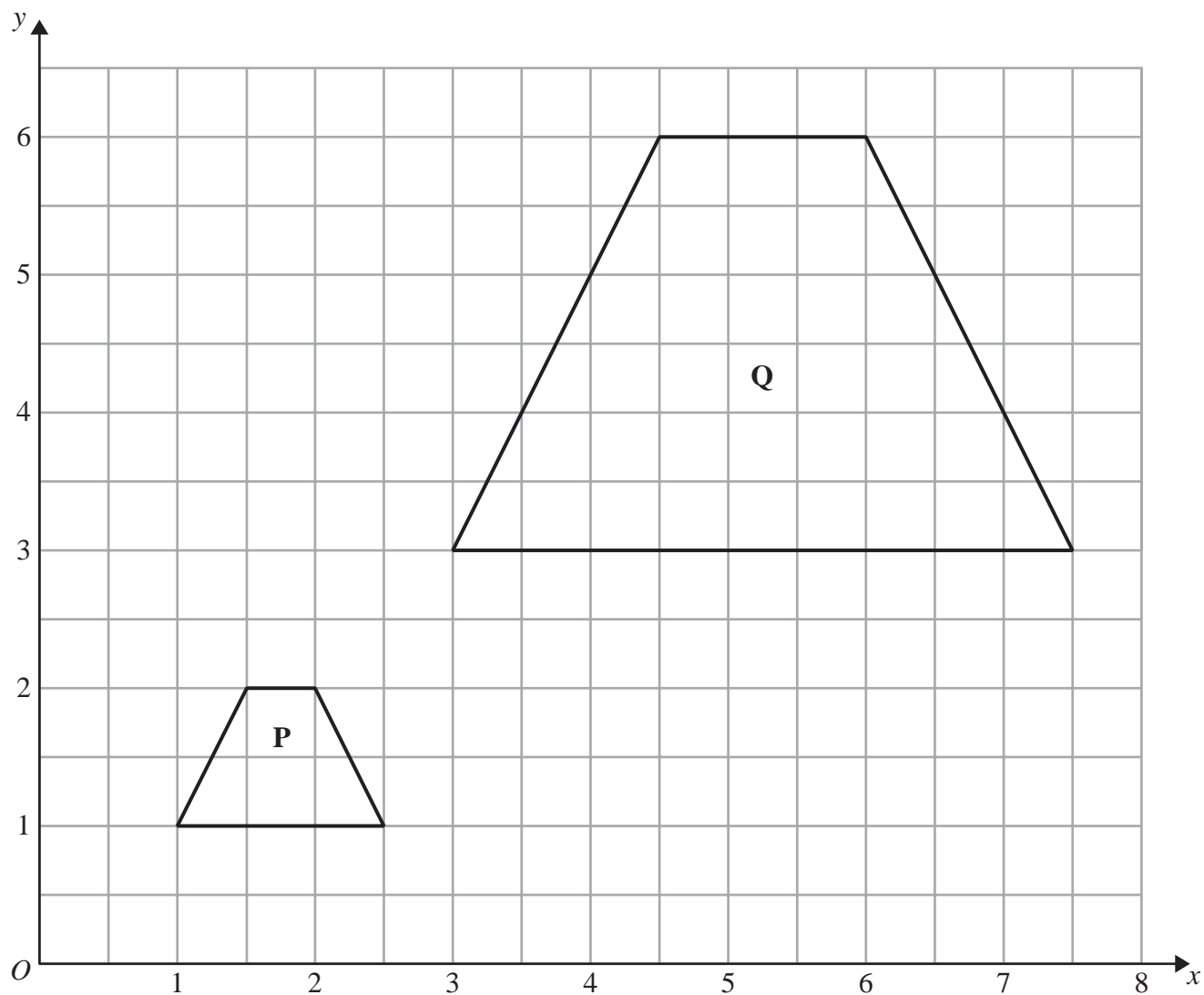
(b) Work out the value of x .

$x = \dots\dots\dots$
(2)

(Total for Question 22 is 5 marks)



23



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

.....

.....

(Total for Question 23 is 3 marks)



24 The diagram shows a container used to store oil.

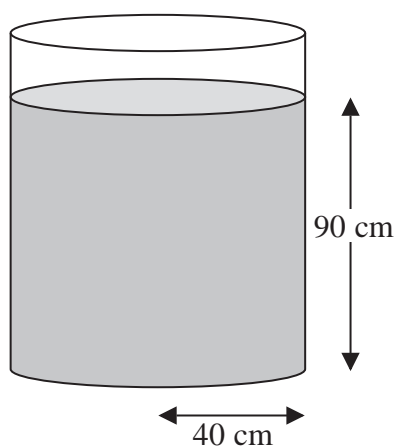


Diagram **NOT**
accurately drawn

The container is in the shape of a cylinder of radius 40 cm.

The height of the oil in the container is 90 cm.

65 litres of oil are taken from the container.

1 litre = 1000 cm^3 .

Work out the new height of the oil in the container.

Give your answer correct to one decimal place.

..... cm

(Total for Question 24 is 4 marks)



25 Make h the subject of the formula $x = 5h + 8$

.....
(Total for Question 25 is 2 marks)

TOTAL FOR PAPER IS 80 MARKS

