Write your name here

Surname		Other names

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 100
- 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.
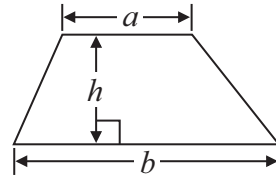- Check your answers if you have time at the end.

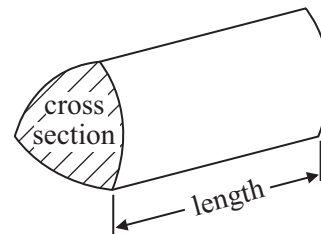*Turn over* ▶

GCSE Mathematics 1MA0

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 × length

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

1   (a) Write the number **four thousand**, **two hundred and sixteen** in figures.

....
(1)

   (b) Write down the value of the 8 in the number 78 561

....
(1)

   (c) Write the number 3568 to the nearest ten.

....
(1)

(Total for Question 1 is 3 marks)

2   Write down the name of each of these 3-D shapes.
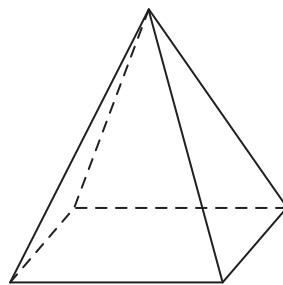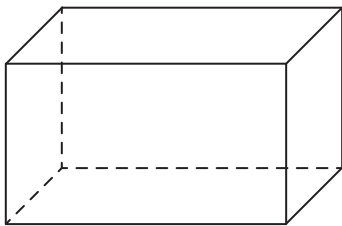
   (i) ....   (ii) ....

(Total for Question 2 is 2 marks)

3 The pictogram shows the number of DVDs sold in a shop on Monday, on Tuesday and on Wednesday last week.

Monday	◯ ◯ ◯
Tuesday	◯ ◗
Wednesday	◯ ◿
Thursday	
Friday	

Key:

◯ represents 8 DVDs

(a) Write down the number of DVDs sold on Monday.

....
(1)

(b) Write down the number of DVDs sold on Wednesday.

....
(1)

16 DVDs were sold on Thursday.
28 DVDs were sold on Friday.

(c) Use this information to complete the pictogram.

(2)

(Total for Question 3 is 4 marks)

4 Jalin has a £10 note to spend on stickers.
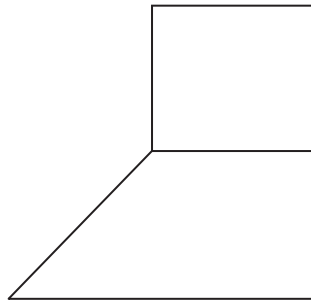A packet of stickers costs 79p.

He buys as many packets of stickers as possible.

Work out how much change Jalin should get.

....

(Total for Question 4 is 3 marks)

5 Here is a square and a trapezium.

(a) Write down the size of each angle of the square.

....°

(1)

(b) Mark, with the letter O, an obtuse angle.

(1)

(c) Find two lines that are perpendicular.
   Mark each of these lines with a letter P.

(1)

(Total for Question 5 is 3 marks)

6 (a) Simplify $c + c + c$

....

(1)

(b) Simplify $2e \times 3f$

....

(1)

(c) Simplify $9p + 2t - 2p + 3t$

....

(2)

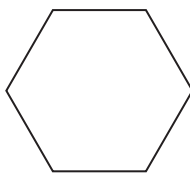**(Total for Question 6 is 4 marks)**

7 Here is a shape.
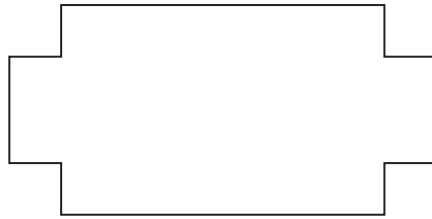
(a) Draw all the lines of symmetry on this shape.

(2)

Here is a regular hexagon.

(b) Write down the order of rotational symmetry of this regular hexagon.

....

(1)

(Total for Question 7 is 3 marks)

8 The shaded shape is drawn on a grid of centimetre squares.
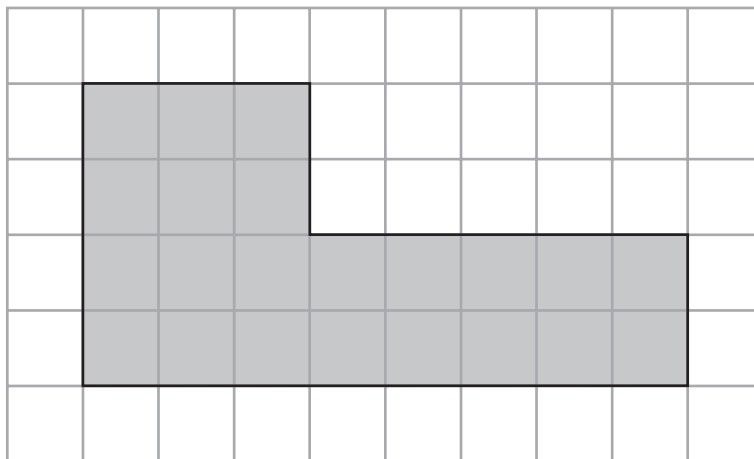
(a) Find the perimeter of the shaded shape.

.... cm

(1)

(b) Find the area of the shaded shape.

.... cm^2

(1)

(Total for Question 8 is 2 marks)

9 The table gives information about five printers.

Printer	Cost	Wi-fi	Print from a camera	Printing cost per page
Smart	£260	✓	✓	4p
Office	£138		✓	2p
Kanon	£285	✓	✓	5p
Elton	£160	✓		4p
Quikprint	£115		✓	3p

(a) Which printer costs the most?

....

(1)

(b) Which printers do **not** have wi-fi?

....

(1)

(c) Which printer has a printing cost per page of 4p **and** can print from a camera?

....

(1)

(Total for Question 9 is 3 marks)

10

60°

140° x
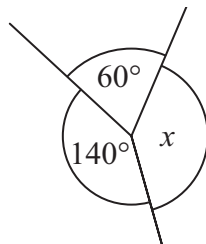
Diagram **NOT**
accurately drawn

(i) Work out the size of angle x.

.... °

(ii) Give a reason for your answer.

....

....

(Total for Question 10 is 2 marks)

11 (a) Write down the time shown on this clock.
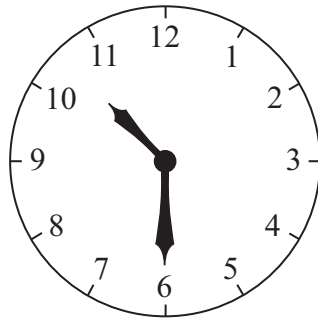
....
(1)

(b) Write 4 10 pm using the 24-hour clock.

....
(1)

Ed goes to the gym on his way to work.

He takes 15 minutes to walk from his home to the gym.
He will be at the gym for 1 hour.
Ed takes 10 minutes to walk from the gym to work.
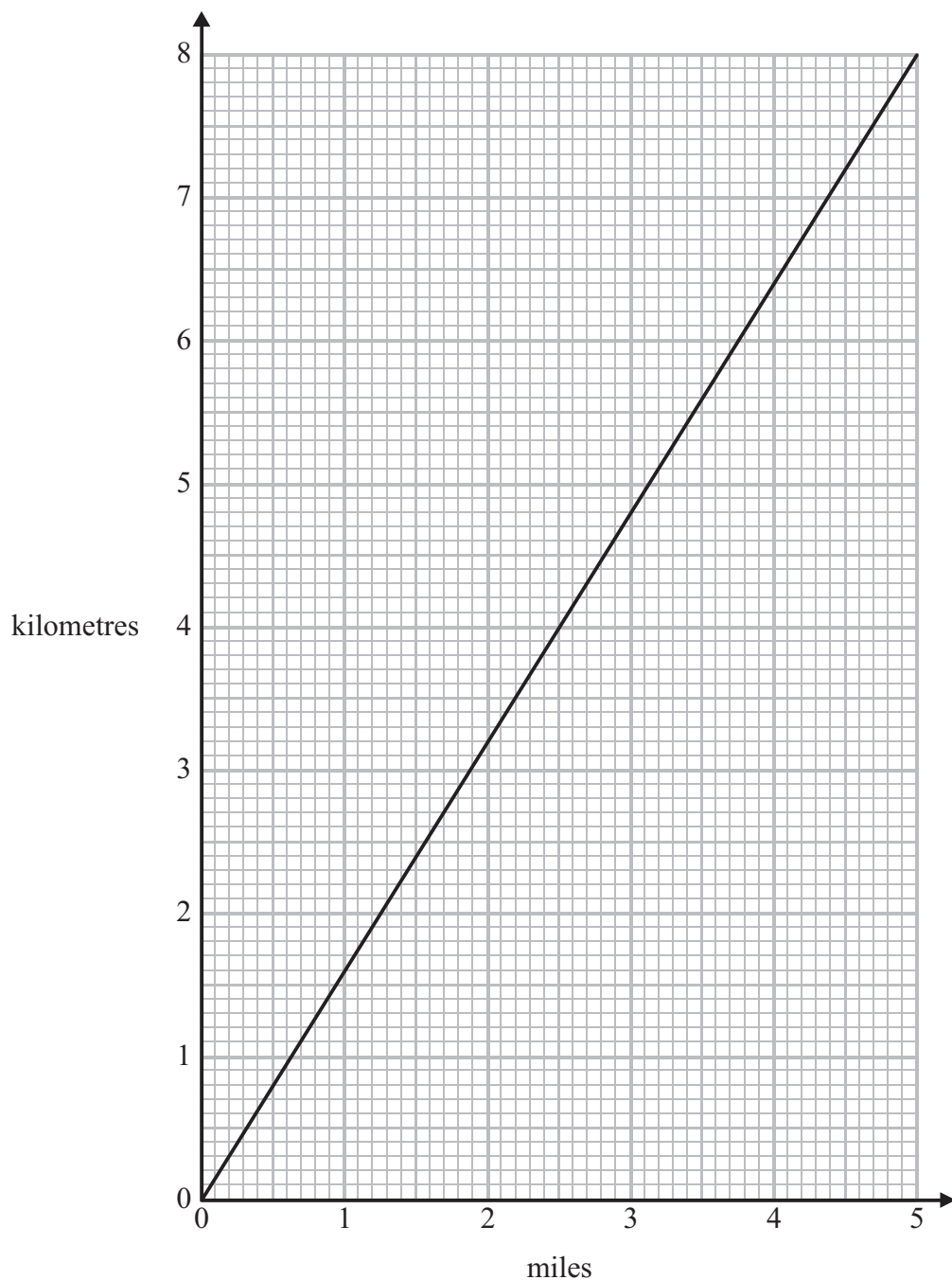
Ed needs to be at work at 8 15 am.

(c) What is the latest time he can leave home?

....
(2)

(Total for Question 11 is 4 marks)

12 You can use the graph to change between miles and kilometres.

(a) Change 3 miles into kilometres.

.... kilometres

(1)

(b) Change 60 kilometres into miles.

.... miles

(2)

(Total for Question 12 is 3 marks)

13 Kaz rolled a dice 10 times.

Here are her scores.

$$2 \quad 6 \quad 5 \quad 4 \quad 4 \quad 2 \quad 1 \quad 3 \quad 4 \quad 3$$

(a) Find the mode.

....

(1)

(b) Work out the mean.

....

(2)

(c) Work out the range.

....

(2)

(Total for Question 13 is 5 marks)

14 $P = 3.5x - y$

(a) Work out the value of P when $x = 12$ and $y = 5$

....

(2)

(b) Work out the value of P when $x = -9$ and $y = -6$

....
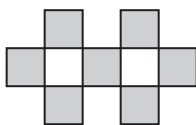
(2)

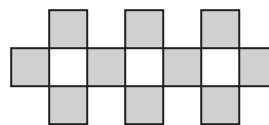**(Total for Question 14 is 4 marks)**

15 Here are some patterns made from grey tiles.
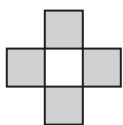
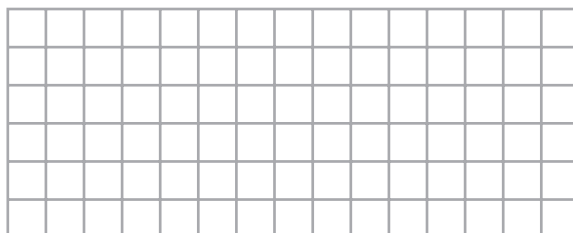Pattern number 1   Pattern number 2   Pattern number 3

(a) Draw Pattern number 4 on the grid below.

(1)

(b) How many grey tiles are needed for Pattern number 10?

....

(2)

Jenny says,

'I will need exactly 46 grey tiles for Pattern number 18'.

(c) Is Jenny right?
    You must give a reason for your answer.

....

....

....

(2)

(Total for Question 15 is 5 marks)

16 Michael writes down 4 different factors of 60

He adds the 4 factors together.
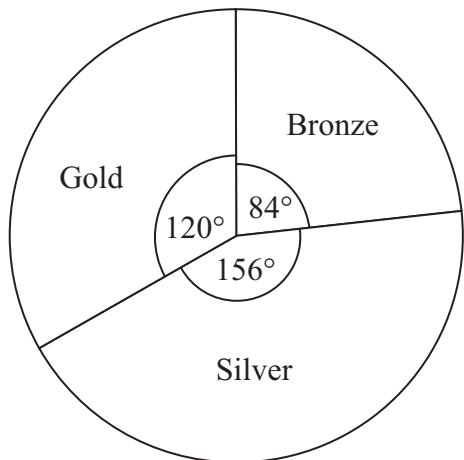He gets a number greater than 20 but less than 35

What 4 factors could Michael have written down?

....
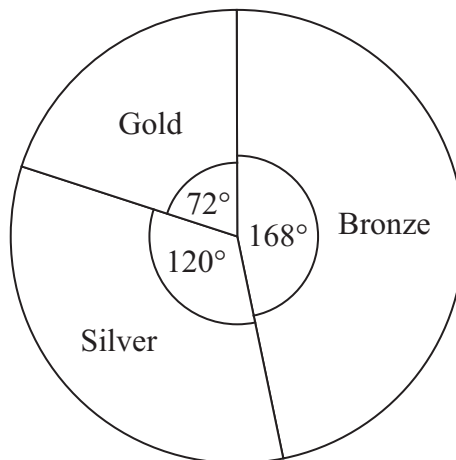
(Total for Question 16 is 3 marks)

17 The pie charts show some information about the numbers of medals won by Germany and by the Russian Federation in the 2010 Winter Olympics.

Medals won by Germany

Medals won by the Russian Federation

Germany won 7 bronze medals.

(a) How many gold medals did Germany win?

....

(2)

(b) Graham says,

'The pie charts show that Germany won more gold medals than the Russian Federation'.

Is Graham right? ....

You must explain your answer.

....

....

(1)

(Total for Question 17 is 3 marks)

18 Sue has a bag of 18 sweets.

      5 of the sweets are blue
      7 of the sweets are red
      6 of the sweets are green

Sue takes at random a sweet from the bag.

Write down the probability that Sue

(i) takes a red sweet,

....

(ii) does **not** take a green sweet,

....

(iii) takes a yellow sweet.

....

(Total for Question 18 is 3 marks)

19 (a) Solve $b - 7 = 12$

$b =$ ....
(1)

(b) Solve $5e = 40$

$e =$ ....
(1)

(c) Solve $4m + 6 = 15$

$m =$ ....
(2)

(Total for Question 19 is 4 marks)

20 Rani has 250 DVDs.

42% of her DVDs are thrillers.

$\dfrac{2}{5}$ of her DVDs are comedies.

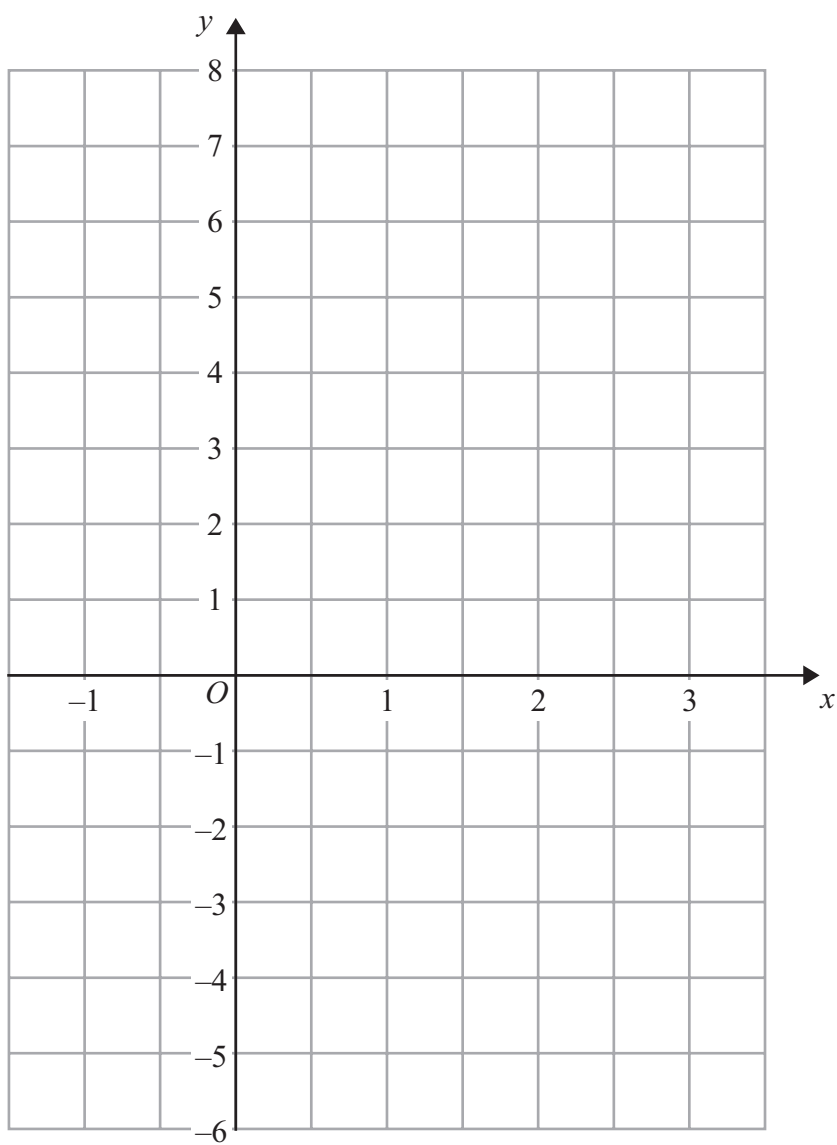The rest of her DVDs are science fiction.

How many science fiction DVDs does Rani have?

....

(Total for Question 20 is 4 marks)

21 On the grid, draw the graph of $y = 3x - 2$ for values of x from -1 to 3

(Total for Question 21 is 3 marks)

22 Pat and Julie share some money in the ratio 2 : 5
Julie gets £45 more than Pat.

How much money did Pat get?

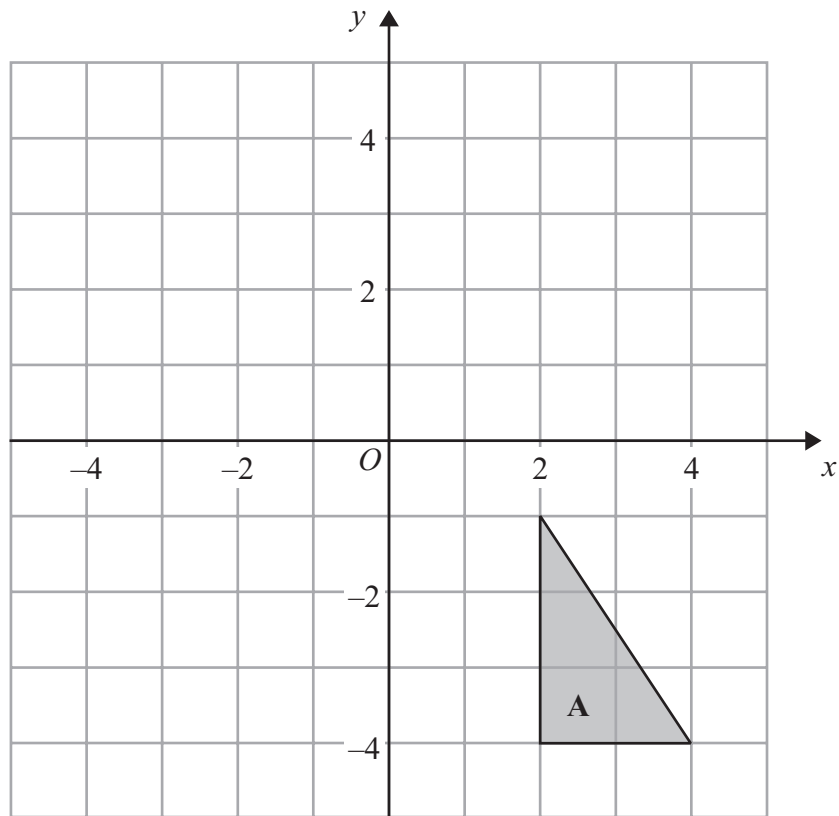£...

(Total for Question 22 is 3 marks)

*23 Potatoes cost £9 for a 12.5 kg bag at a farm shop.
The same type of potatoes cost £1.83 for a 2.5 kg bag at a supermarket.

Where are the potatoes the better value, at the farm shop or at the supermarket?
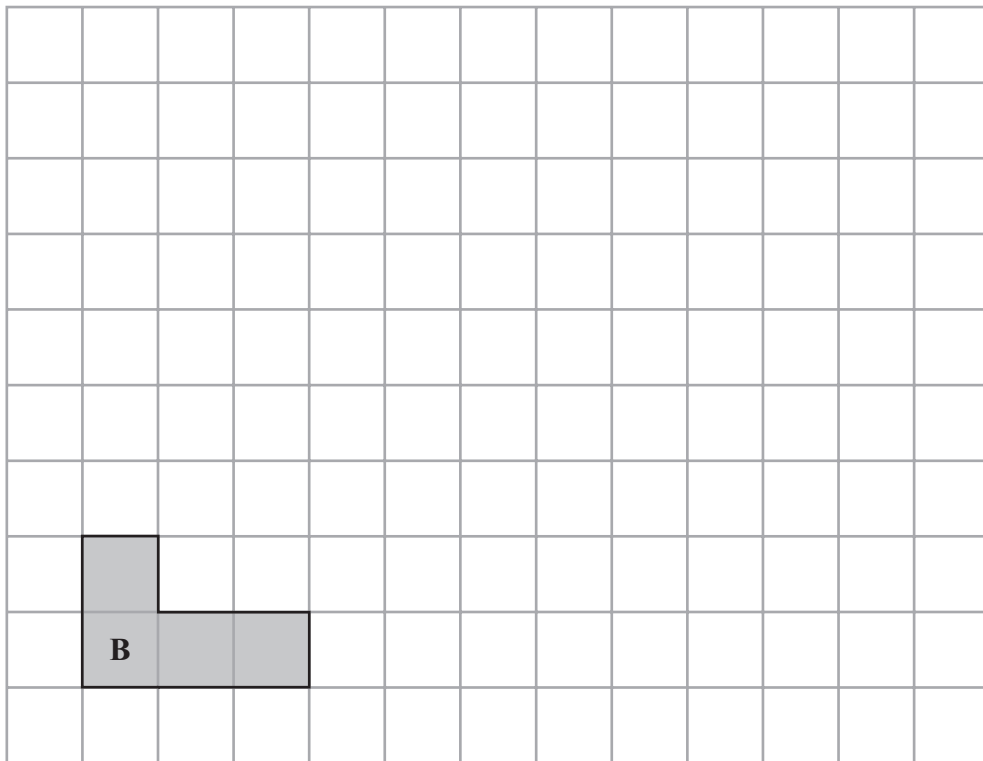You must show your working.

(Total for Question 23 is 4 marks)

24

(a) Reflect triangle **A** in the *x*-axis.

(2)

(b) Draw an enlargement, scale factor 3, of shape **B**.

(2)

(Total for Question 24 is 4 marks)

25 Linda is going on holiday to the Czech Republic.
She needs to change some money into koruna.

She can only change her money into 100 koruna notes.

Linda only wants to change up to £200 into koruna.
She wants as many 100 koruna notes as possible.

The exchange rate is £1 = 25.82 koruna.

(a) How many 100 koruna notes should she get?

....
(3)

Linda buys a meal in the Czech Republic.
The meal costs 400 koruna.

(b) Work out the cost of the meal in pounds.

£...
(3)

(Total for Question 25 is 6 marks)

26 The scatter graph shows some information about 8 cars.
For each car it shows the engine size, in litres, and the distance, in kilometres, the car travels on one litre of petrol.
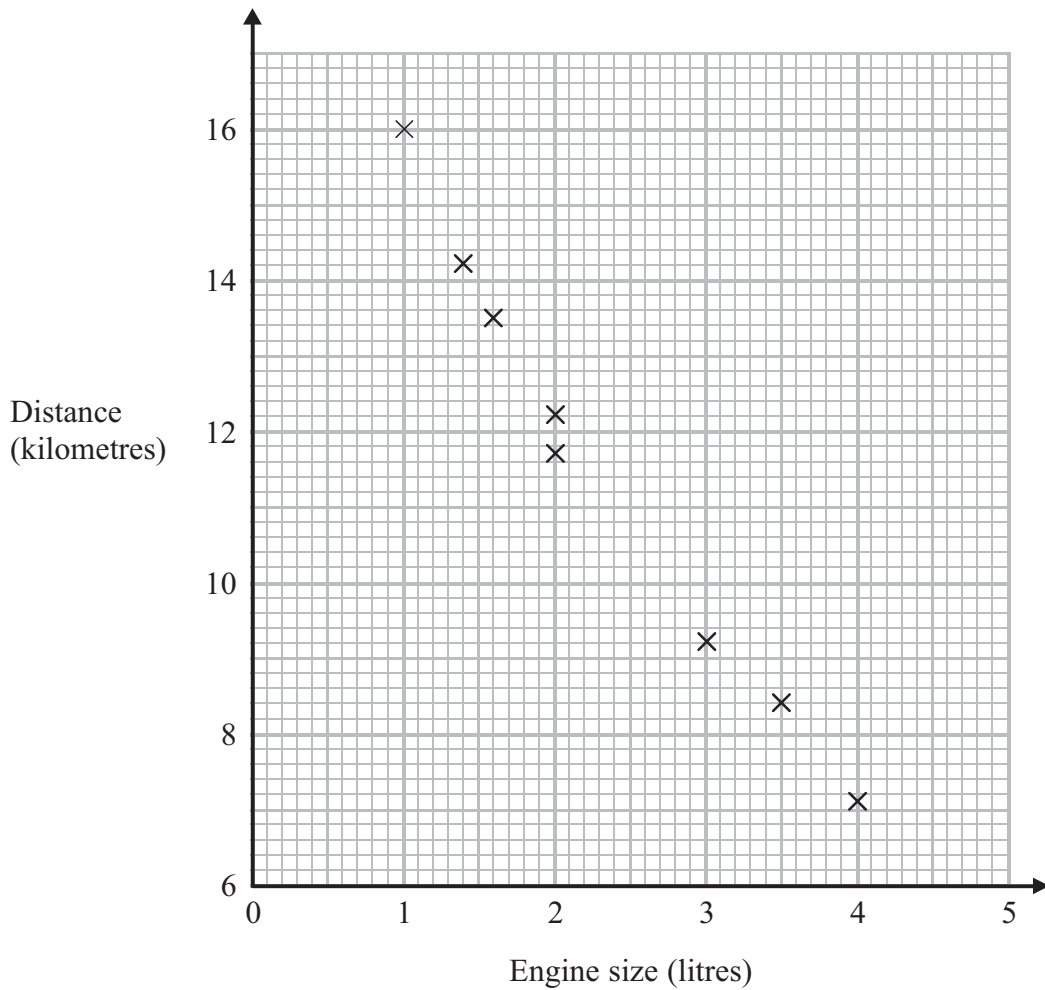
(a) What type of correlation does the scatter graph show?

....

(1)

A different car of the same type has an engine size of 2.5 litres.

(b) Estimate the distance travelled on one litre of petrol by this car.

.... kilometres

(2)

(Total for Question 26 is 3 marks)

*27 Mr Weaver's garden is in the shape of a rectangle.

In the garden

there is a patio in the shape of a rectangle
and two ponds in the shape of circles with diameter 3.8 m.
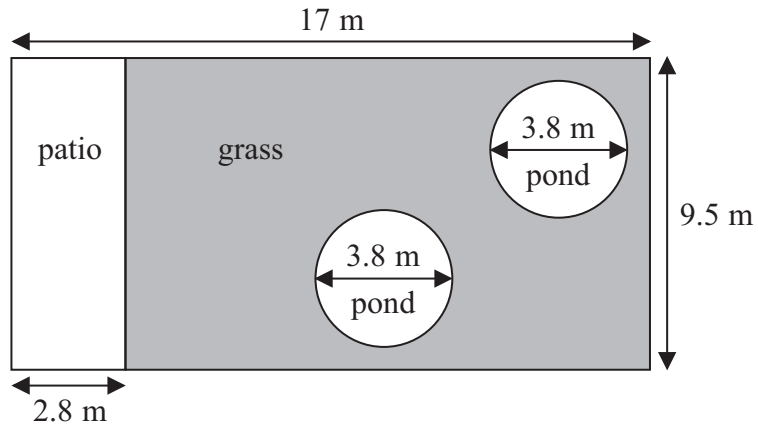
The rest of the garden is grass.

17 m

Diagram **NOT**
accurately drawn

patio   grass

3.8 m
pond

9.5 m

3.8 m
pond

2.8 m

Mr Weaver is going to spread fertiliser over all the grass.
One box of fertiliser will cover 25 m² of grass.

How many boxes of fertiliser does Mr Weaver need?
You must show your working.

(Total for Question 27 is 5 marks)

*28 Henry is thinking about having a water meter.

These are the two ways he can pay for the water he uses.

Water Meter

A charge of £28.20 per year

plus

91.22p for every cubic metre of water used

1 cubic metre = 1000 litres

No Water Meter

A charge of £107 per year

Henry uses an average of 180 litres of water each day.

Henry wants to pay as little as possible for the water he uses.
Should Henry have a water meter?

(Total for Question 28 is 5 marks)

TOTAL FOR PAPER IS 100 MARKS

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