

Write your name here

Surname

Other names

Pearson Edexcel
Level 1/Level 2 GCSE (9 - 1)

Centre Number

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Candidate Number

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Mathematics

Paper 2 (Calculator)

Foundation Tier

Mock Set 2 – Spring 2017

Time: 1 hour 30 minutes

Paper Reference

1MA1/2F

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.*
- You must **show all your working**.
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- **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.*

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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Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write down the value of the 3 in the number 4302

.....

(Total for Question 1 is 1 mark)

2 Write down an even cube number.

.....

(Total for Question 2 is 1 mark)

3 Here is a list of numbers.

7 10 25 42 13

From the numbers in the list, write down a multiple of 3

.....

(Total for Question 3 is 1 mark)

4 There are 29 children in a class.
13 of the children are girls.
One of the children is chosen at random.

Write down the probability that the child is a boy.

.....

(Total for Question 4 is 2 marks)

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5 There are 3 boys and 3 girls on a school council.

| Boys | Girls |
|-------|--------|
| Alfie | Denise |
| Brian | Emily |
| Cliff | Freya |

A teacher wants to choose one of the boys and one of the girls to go to a meeting. List all the possible combinations the teacher can choose.

.....

.....

.....

(Total for Question 5 is 2 marks)

6 (a) Simplify $4x - 2y + 3x - 6y$

.....

(2)

(b) Expand $2x(3 - x)$

.....

(1)

(Total for Question 6 is 3 marks)



Cafe Price List

| | |
|---------------|-----|
| tea | 65p |
| coffee | 79p |
| hot chocolate | 84p |

Dylan and some friends went to the cafe.

Dylan bought himself a cup of tea.

He bought each of his friends a cup of coffee.

He paid with a £10 note.

He got £4.61 change.

How many friends were with Dylan at the cafe?

.....
(Total for Question 7 is 4 marks)

8 Here are the first five terms of a sequence.

14 11 8 5 2

(i) Write down the next term of this sequence.

.....
(1)

(ii) Explain how you got your answer.

.....
(1)

(Total for Question 8 is 2 marks)



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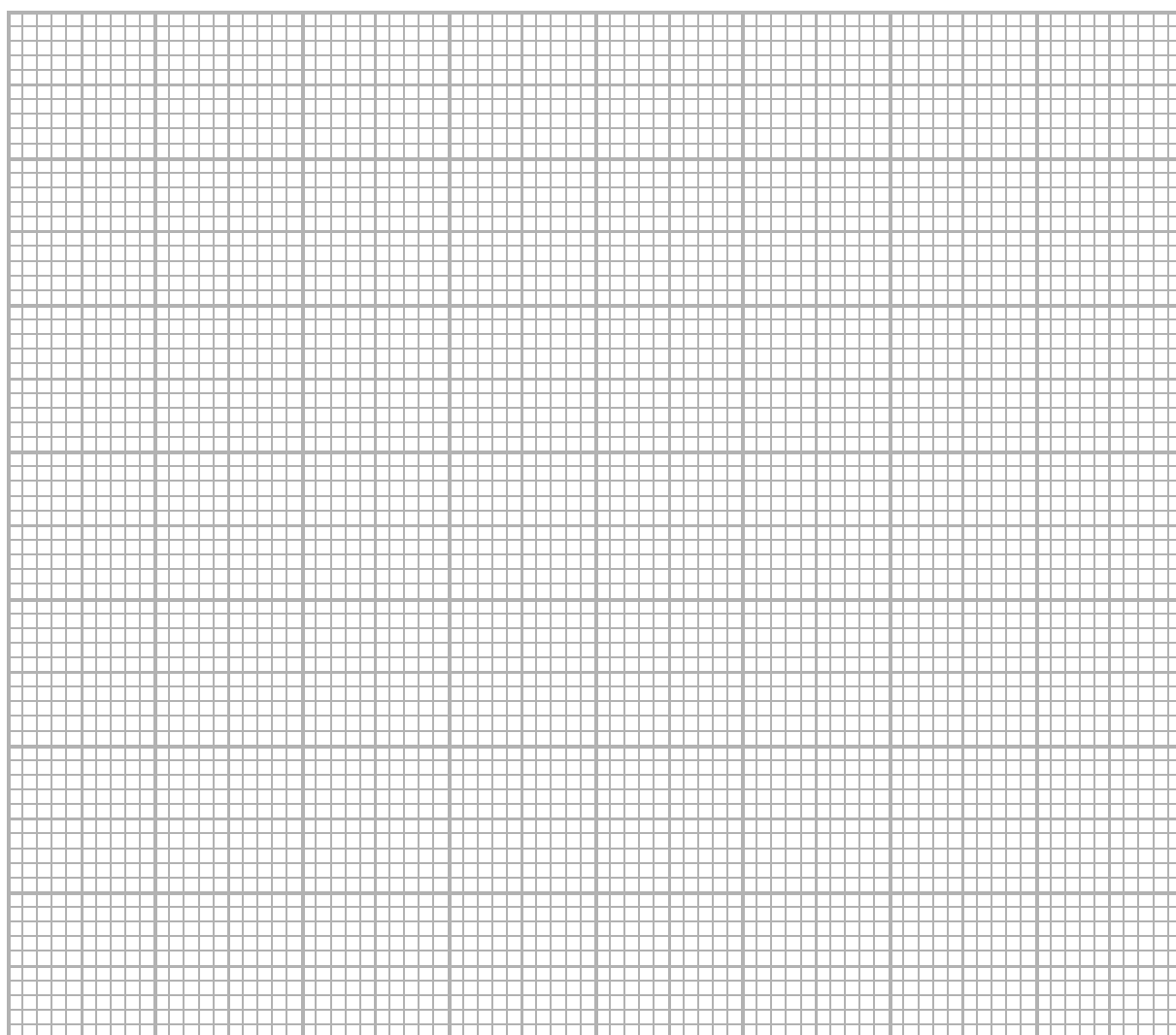
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9 Bruna asked 20 students in each of Year 7 and Year 8 what pet they liked best.

The table gives information about her results.

| | Year 7 | Year 8 |
|--------|--------|--------|
| Cat | 7 | 4 |
| Dog | 8 | 10 |
| Rabbit | 5 | 6 |

Draw a suitable bar chart for this information.



(Total for Question 9 is 4 marks)



10 A map has a scale of 1 cm to 25 km.

The distance between the cities of Edinburgh and Bristol is 500 km.

What is the distance on the map between these two cities?

..... cm

(Total for Question 10 is 2 marks)

11 Robin is describing a shape to her friend Lilly.

Robin says,

“The shape has four sides.
It only has one pair of parallel sides.”

(a) What shape is Robin describing?

.....
(1)

Lilly then describes a shape.

Lilly says,

“The shape has four sides.
It has two pairs of equal opposite sides.
The opposite sides are parallel.”

Robin says there are two possible shapes.

(b) Is she correct?

Explain your answer.

.....
(1)

(Total for Question 11 is 2 marks)

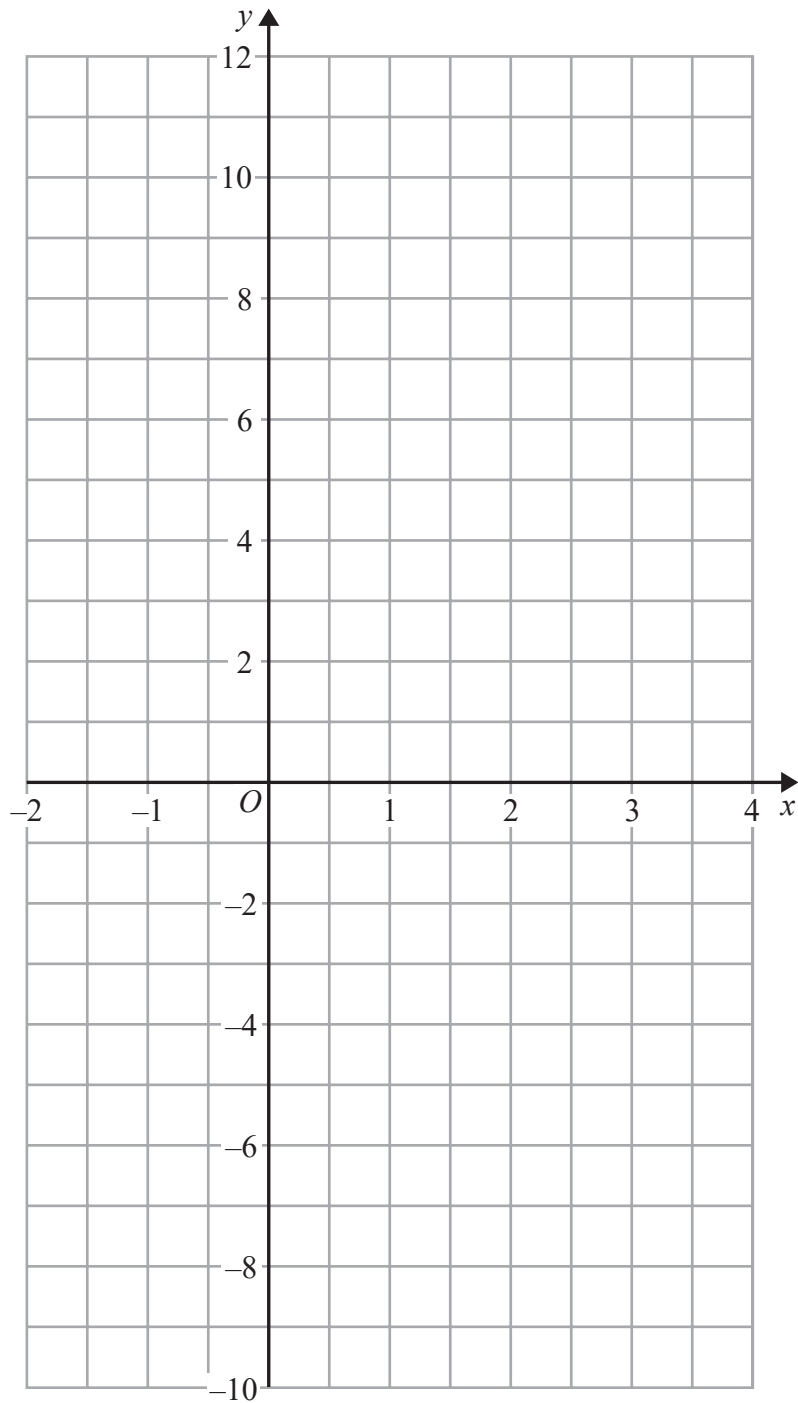


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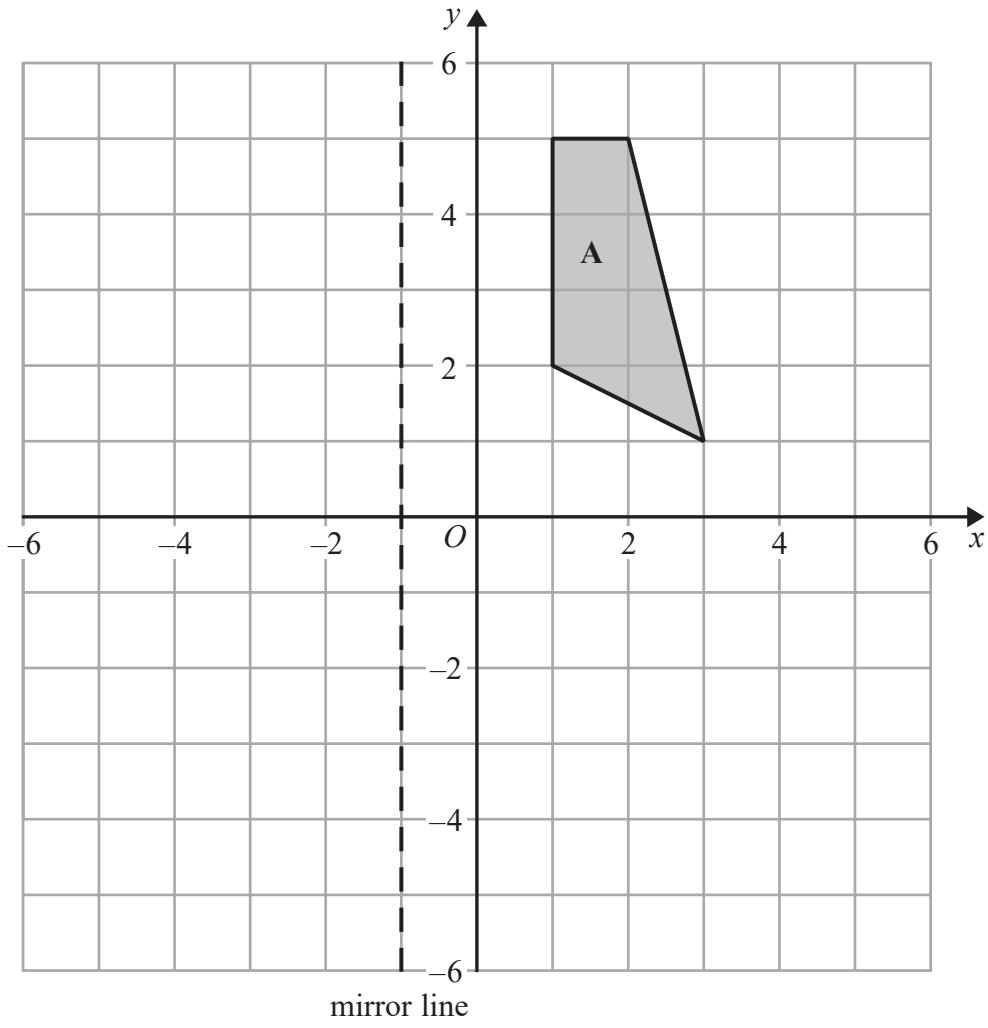
12 On the grid, draw the graph of $y = 3x - 2$ for values of x from -2 to 4



(Total for Question 12 is 3 marks)



13 (a) On the grid, reflect shape A in the mirror line.



(2)

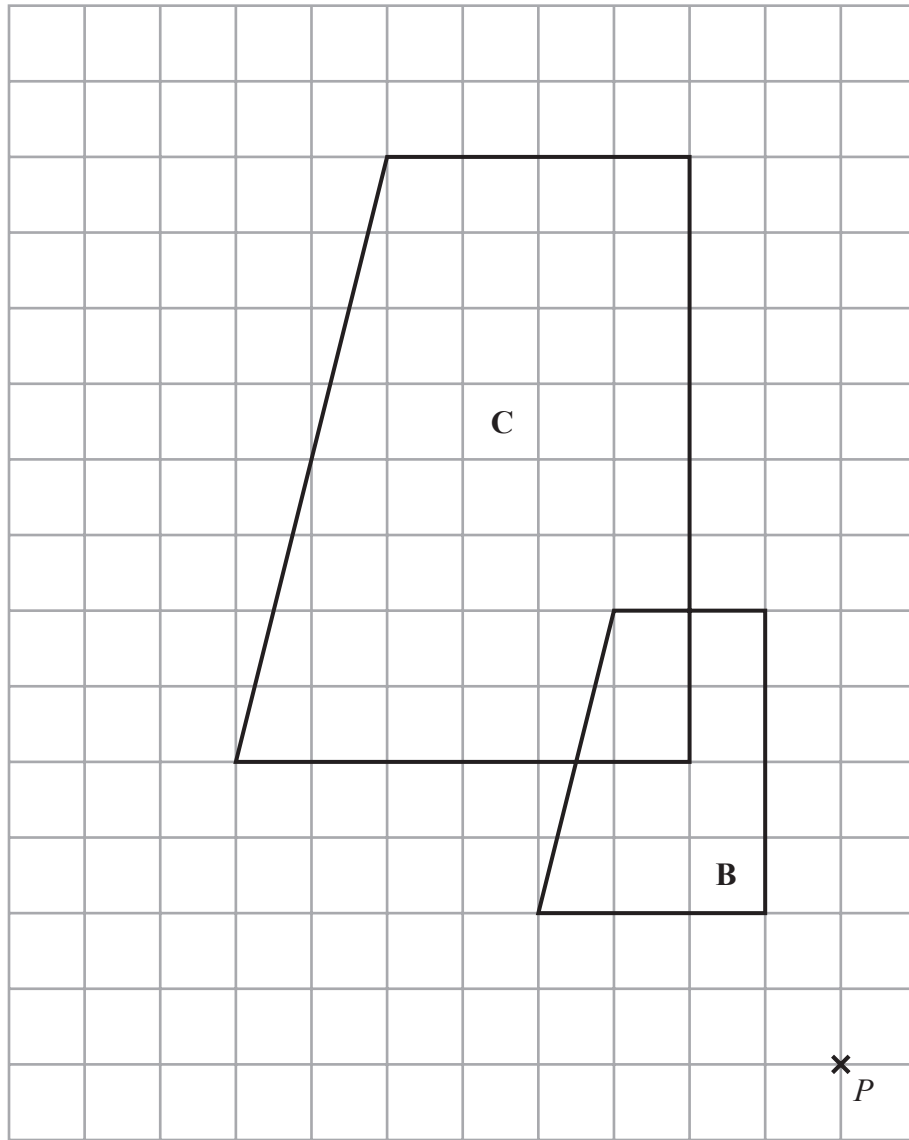
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(b)



Describe fully the single transformation that maps trapezium **B** onto trapezium **C**.

(2)

(Total for Question 13 is 4 marks)



14 A teacher asked Tyrese to find the value of $2n^2 - 3n$ when $n = 3$

Here is his working.

$$\begin{aligned}2 \times 3^2 - 3 \times 3 \\&= 6^2 - 9 \\&= 36 - 9 \\&= 27\end{aligned}$$

(i) What mistake has Tyrese made?

(1)

The teacher then asked Megan to find the value of $2n^2 - 3n$ when $n = -4$

Here is her working.

$$\begin{aligned}2 \times -4^2 - 3 \times -4 \\&= 2 \times -16 + 12 \\&= -32 + 12 \\&= -20\end{aligned}$$

(ii) What mistake has Megan made?

(1)

(Total for Question 14 is 2 marks)



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15 Here is a list of ingredients for making 20 gingerbread men.

- | |
|--------------------|
| 350 g flour |
| 10 g ground ginger |
| 100 g butter |
| 175 g brown sugar |
| 60 g syrup |
| 1 egg |

Sue has,

- 1 kg flour
- 200 g ground ginger
- 500 g butter
- 600 g brown sugar
- 100 g syrup
- 2 eggs

Sue wants to make 60 gingerbread men.
She has not got enough of all the ingredients.

(a) Work out how much more of each ingredient she needs.

(4)

On a different day Sue wants to make 50 gingerbread men.
She has no eggs.
She works out she needs to buy at least 3 eggs.

(b) Explain why she needs to buy at least 3 eggs.

(1)

(Total for Question 15 is 5 marks)



- 16 Fayyaz bought a mobile phone for £180
He sold it at a profit of 22%

How much money did Fayyaz sell the mobile phone for?

£.....

(Total for Question 16 is 2 marks)

- 17 (a) Use your calculator to work out $\frac{43.2 + \sqrt{99.05}}{0.193}$

Write down all the digits on your calculator display.

.....
(2)

- (b) Write your answer to part (a) correct to 2 significant figures.

.....
(1)

(Total for Question 17 is 3 marks)



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18 Solve $4x + 3 = 7 - x$

$x = \dots\dots\dots$

(Total for Question 18 is 2 marks)

19 Neal, Craig and Keith are cousins.

Their ages are in the ratio 17:14:9

Craig is 42 years old.

How old are Neal and Keith?

Neal $\dots\dots\dots$ years

Keith $\dots\dots\dots$ years

(Total for Question 19 is 3 marks)



- 20 Lyn measures the length, x cm, of a piece of string as 3.5 cm correct to the nearest millimetre.

Write down the error interval for x .

.....
(Total for Question 20 is 2 marks)

- 21 There are 300 seeds in a packet of flower seeds.
Each seed will grow into a white flower or a yellow flower or a red flower.

The probability of a seed growing into a white flower is 0.62
45 of the seeds are expected to grow into yellow flowers.

One of the seeds is chosen at random from the packet.

What is the probability that this seed will grow into a red flower?

.....
(Total for Questions 21 is 3 marks)



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22 100 adults were asked how they keep fit.

Each adult goes to the gym or runs or cycles.

45 of these adults are female.

30 of the 52 adults who go to the gym are female.

35 adults run.

9 males cycle.

How many females run?

.....
(Total for Question 22 is 3 marks)



23 On a school trip the ratio of the number of teachers to the number of students is 1 : 15

The ratio of the number of male students to the number of female students is 7 : 5

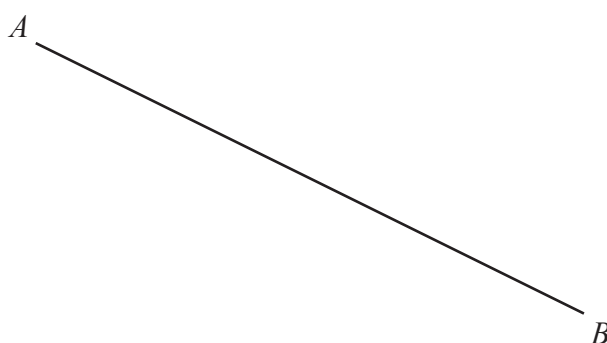
Work out what percentage of all the people on the trip are female students.

Give your answer correct to the nearest whole number.

.....%

(Total for Question 23 is 3 marks)

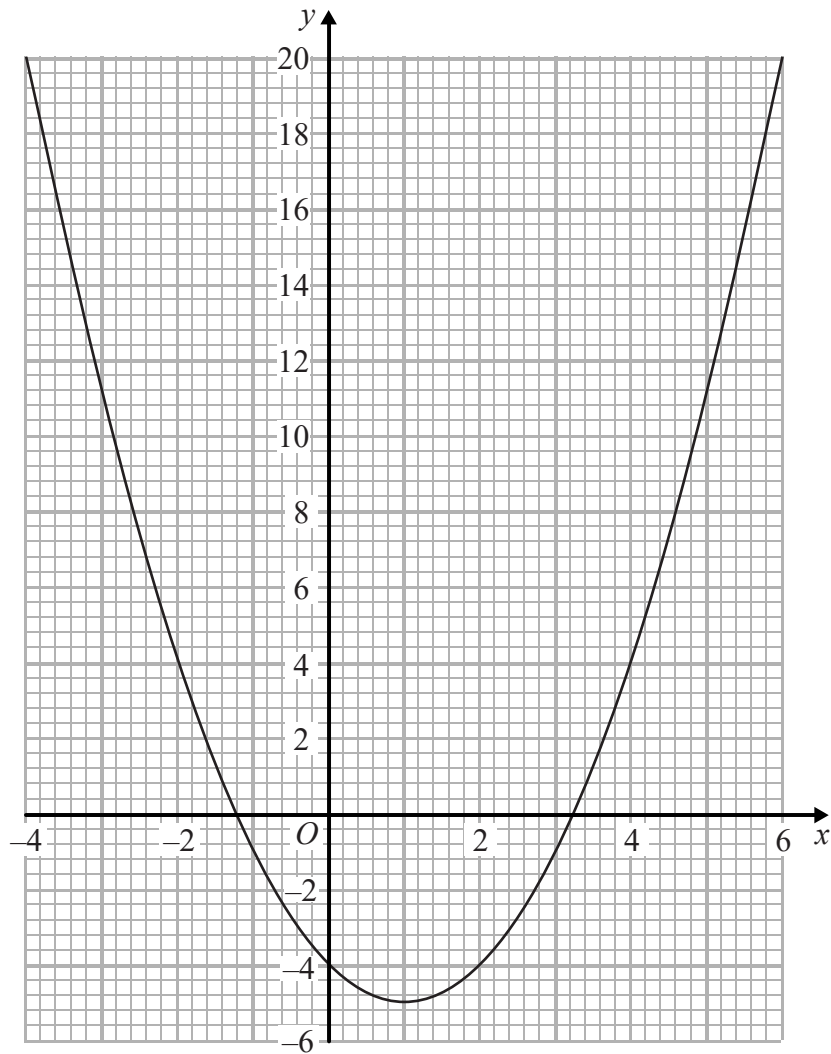
24 In the space below, use ruler and compasses to construct the perpendicular bisector of line AB .



(Total for Question 24 is 2 marks)



25 Here is the graph of $y = x^2 - 2x - 4$



(a) Write down estimates for the roots of $x^2 - 2x - 4 = 0$

.....
(2)

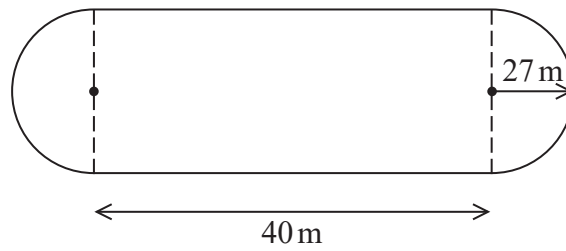
(b) Write down the coordinates of the turning point of $y = x^2 - 2x - 4$

(.....,)
(1)

(Total for Question 25 is 3 marks)



26 The diagram shows a cycle track.



The track has two straight sides each of length 40 m.
Each end of the track is a semicircle of radius 27 m.

The diameter of each wheel of Ian's bike is 590 mm.
Ian is going to ride his bike around the track once.

Calculate how many complete revolutions each wheel of his bike will make.

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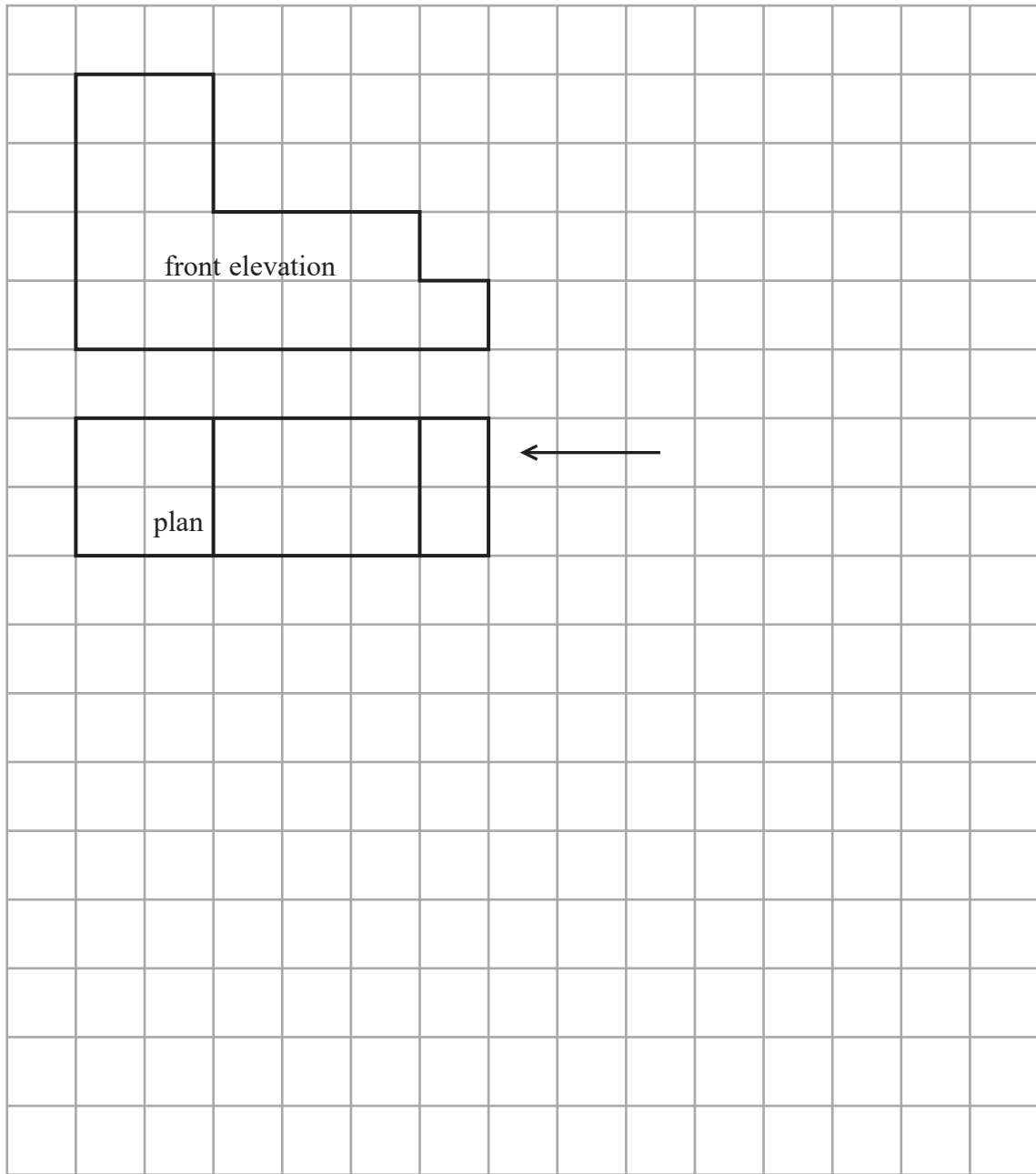
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(Total for Question 26 is 5 marks)



27 The front elevation and plan of a solid are shown on the grid.

On the grid, draw the side elevation from the direction of the arrow.



(Total for Question 27 is 2 marks)



28 The distance from the Earth to the Sun is 1.496×10^{11} metres.
The speed of light is 3×10^8 metres per second.

- (a) Show that, correct to 3 significant figures, light will take 0.139 hours to travel from the Sun to the Earth.

(3)

1 googol is 1×10^{100}

Danesh says,

“When I multiply 1.496×10^{11} by 6.68×10^9 I get nearly 1 googol because
 $1.496 \times 10^{11} \times 6.68 \times 10^9 = 9.99 \times 10^{99}$ ”

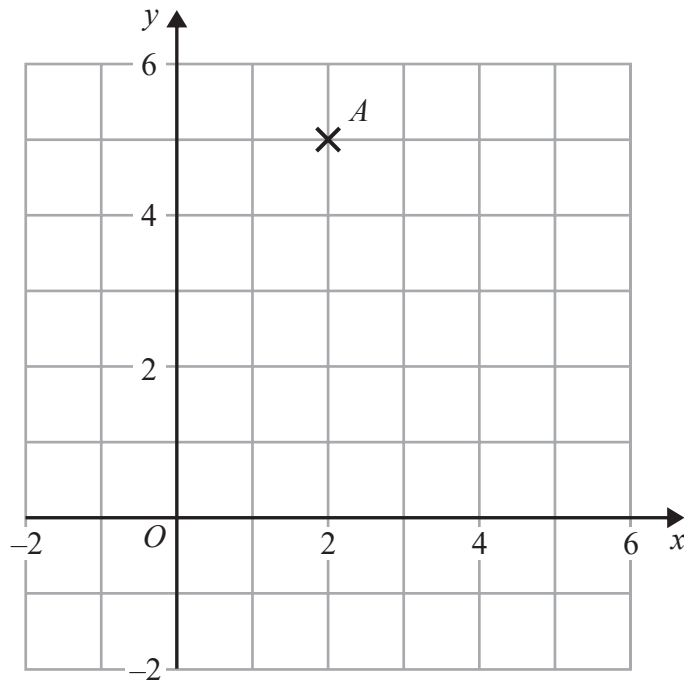
- (b) Is Danesh correct?
Give a reason for your answer.

(1)

(Total for Question 28 is 4 marks)



29 Find an equation of the straight line with gradient 3 that passes through point A .



(Total for Question 29 is 2 marks)



30 (a) Factorise $x^2 - 169$

.....
(1)

(b) Expand and simplify $(3x + 2)(2x - 1)$

.....
(2)

(Total for Question 30 is 3 marks)

TOTAL FOR PAPER IS 80 MARKS

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