Write your name here

Surname	Other names

Pearson Edexcel International GCSE

Centre Number | Candidate Number

Mathematics A

Paper 1FR

Foundation Tier

Thursday 24 May 2018 – Morning
Time: 2 hours

Paper Reference
4MA0/1FR

You must have:
Ruler graduated in centimetres and millimetres, protractor, 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.
- Without sufficient working, correct answers may be awarded no marks.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*
- **Calculators may be used.**
- You must **NOT** write anything on the formulae page.
  Anything you write on the formulae page will gain NO credit.

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.*

Advice

- Read each question carefully before you start to answer it.
- Check your answers if you have time at the end.

Turn over ▶

P53381A

1/1/1/

P 5 3 3 8 1 A 0 1 2 4

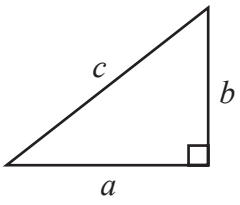
Pearson

International GCSE MATHEMATICS

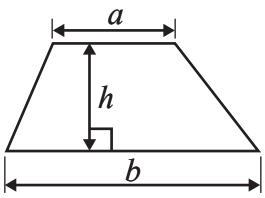
FORMULAE SHEET – FOUNDATION TIER

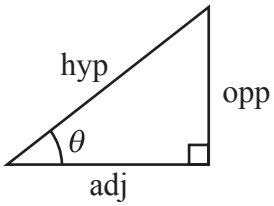
Pythagoras' Theorem

$a^2 + b^2 = c^2$



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





$\text{adj} = \text{hyp} \times \cos\theta$

$\text{opp} = \text{hyp} \times \sin\theta$

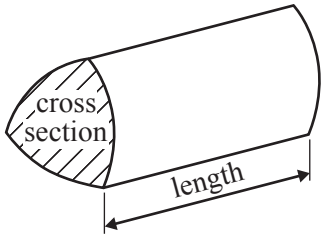
$\text{opp} = \text{adj} \times \tan\theta$

or $\sin\theta = \frac{\text{opp}}{\text{hyp}}$

$\cos\theta = \frac{\text{adj}}{\text{hyp}}$

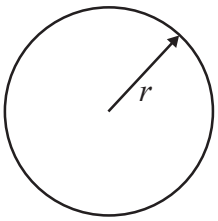
$\tan\theta = \frac{\text{opp}}{\text{adj}}$

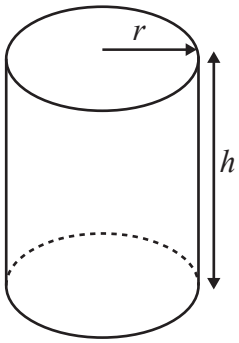
Volume of prism = area of cross section × length



Circumference of circle $= 2\pi r$

Area of circle $= \pi r^2$





Volume of cylinder $= \pi r^2 h$

Curved surface area of cylinder $= 2\pi rh$

Answer ALL TWENTY questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1

16	19	24	27	42

From the numbers in the box, write down

(i) the multiple of 7

.....

(ii) the factor of 72

.....

(iii) the square number

.....

(iv) the cube number

.....

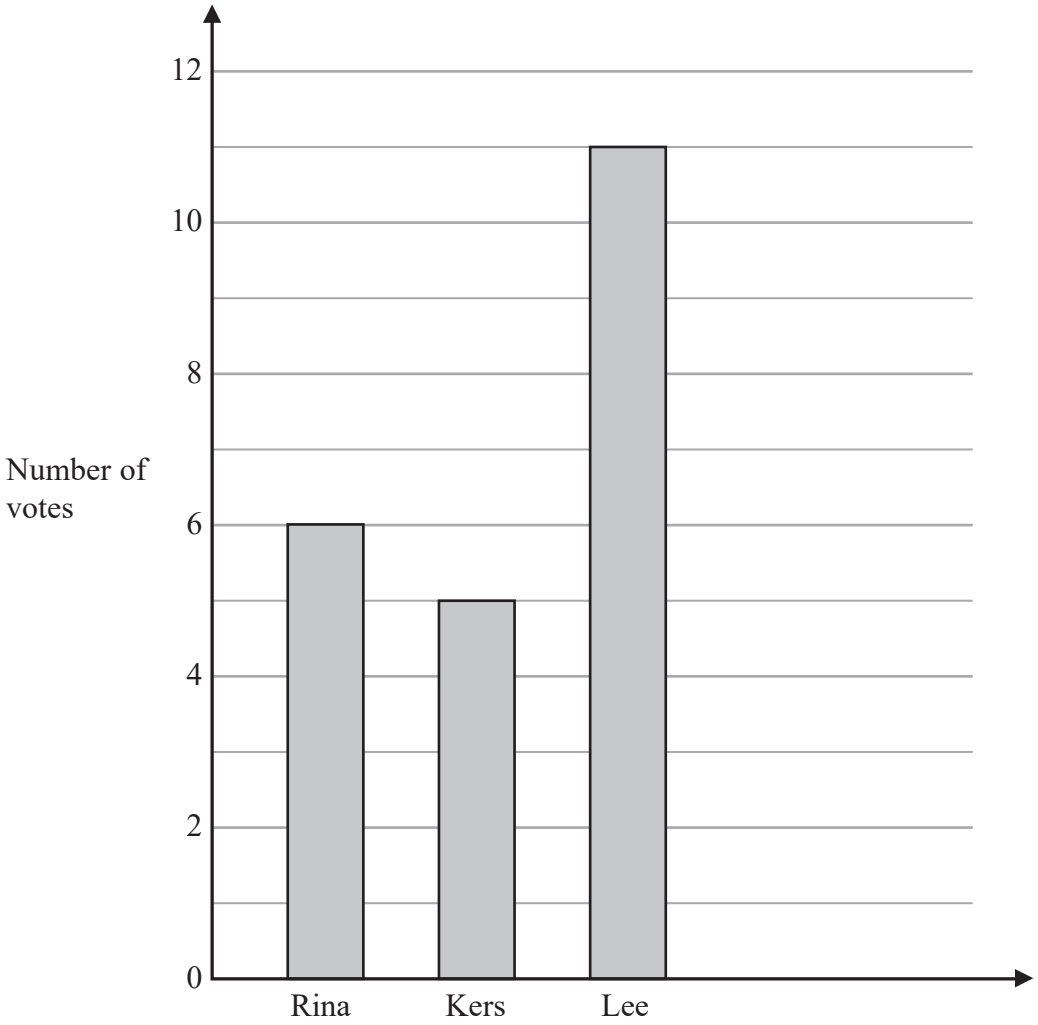
(v) the prime number.

.....

(Total for Question 1 is 5 marks)

2 The students in a class voted for a representative for the School Council.
There were four candidates, Rina, Kers, Lee and Jing.

The bar chart shows information about the number of votes for Rina, for Kers and for Lee.



(a) Write down the number of votes for Kers.

.....

(1)

There were 9 votes for Jing.

(b) Show this information on the bar chart.

(1)

(c) Work out the total number of votes.

.....

(2)

The pictogram has been drawn using the information shown on the bar chart.

Rina	
Kers	
Lee	
Jing	

There were 9 votes for Jing.

(d) Show this information on the pictogram.

(2)

(Total for Question 2 is 6 marks)

3 (a) On the dotted line, write the number so that the two fractions are equivalent.

$$\frac{40}{100} = \frac{\ldots\ldots\ldots}{25}$$

(1)

(b) Write $\frac{11}{4}$ as a mixed number.

.....

(1)

(c) Write $\frac{6}{20}$ as a percentage.

.....%

(1)

(d) Write $\frac{18}{100}$ as a decimal.

.....

(1)

(e) Work out $\frac{5}{9}$ of 72

.....

(2)

(Total for Question 3 is 6 marks)

4 Here are the first five terms of a number sequence.

96 90 84 78 72

(a) Write down the 6th term of the sequence.

.....

(1)

(b) Explain how you found your answer to part (a).

.....

(1)

The 15th term of the sequence is 12

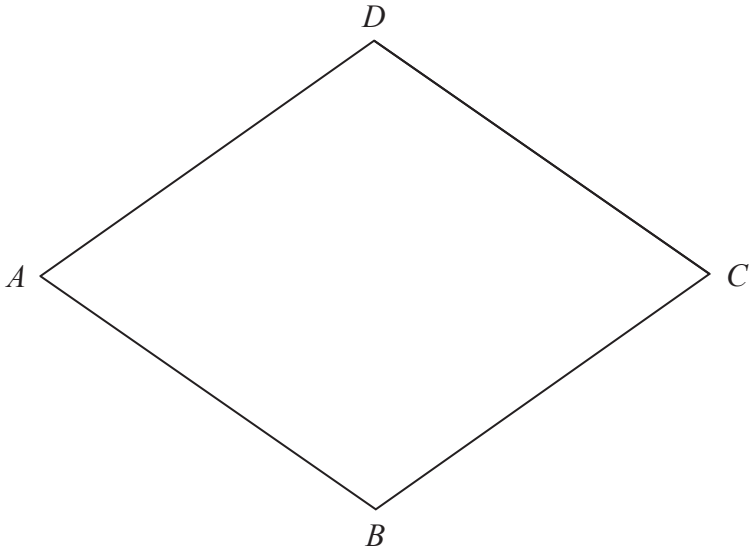
(c) Work out the 14th term of the sequence.

.....

(1)

(Total for Question 4 is 3 marks)

5 The diagram shows a rhombus *ABCD*.



(a) Measure the length of *AB*.

..... cm

(1)

(b) Measure the size of angle *ABC*.

.....°

(1)

(c) On the diagram, draw the lines of symmetry of the rhombus.

(2)

(d) Write down the order of rotational symmetry of the rhombus.

.....

(1)

(Total for Question 5 is 5 marks)

6 Potatoes cost 1.20 euros per kilogram.

(a) Work out the cost of 5 kilograms of potatoes.

..... euros
(1)

Courgettes cost 2.55 euros per kilogram.

(b) Work out the cost of 0.6 kilograms of courgettes.

..... euros
(1)

Carrots cost 0.84 euros per kilogram.
Onions cost 0.92 euros per kilogram.

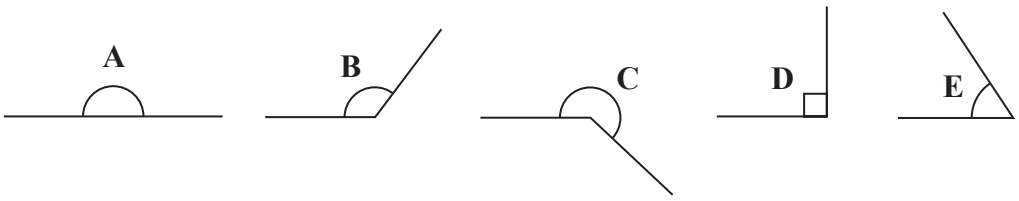
Anna buys 500 grams of carrots and 750 grams of onions.
She pays with a 5 euro note.

(c) Work out how much change Anna should receive.

..... euros
(3)

(Total for Question 6 is 5 marks)

7 Five angles are marked in the following diagram.



(a) Write down the letter of the angle that is a reflex angle.

.....

(1)

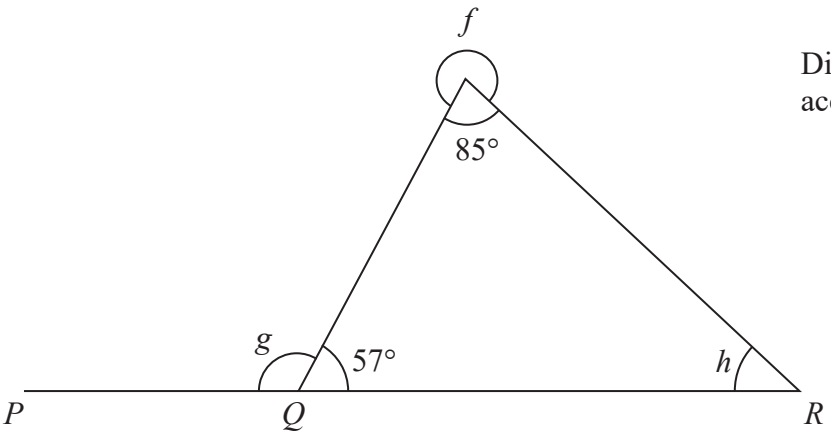


Diagram **NOT** accurately drawn

(b) Work out the size of angle *f*.

..... °

(1)

PQR is a straight line.

(c) Work out the size of angle *g*.

..... °

(1)

(d) Work out the size of angle *h*.

..... °

(2)

(Total for Question 7 is 5 marks)

8 (a) Work out (–9) – (–15)

.....

(1)

(b) Work out 6 × (–8)

.....

(1)

(c) Work out (–64) ÷ (–4)

.....

(1)

(Total for Question 8 is 3 marks)

9 (a) Simplify $g + 2g + 3g - 4g$

.....

(1)

(b) Solve $6m = 18$

$m =$ .....

(1)

$P = 46 - 3st$

(c) Work out the value of P when $s = 2$ and $t = 5$

$P =$ .....

(2)

$Q = 4e + 3f$

(d) Work out the value of e when $Q = 43$ and $f = 7$

$e =$ .....

(3)

(Total for Question 9 is 7 marks)

10 Eight people play a computer game.
Here are their scores.

7 10 8 9 12 9 10 10

(a) Work out the median score.

.....

(2)

(b) Find the range of their scores.

.....

(2)

One of the eight people is selected at random.

(c) Find the probability that the person selected had a score of 10 in the game.

.....

(1)

Helga has played the game many times.

She scored 9 or more in $\frac{5}{6}$ of these games.

(d) Work out an estimate for the probability that the next time Helga plays the game she scores **less** than 9

.....

(1)

Helga is going to play the game another 60 times.

(e) Work out an estimate for the number of times she will score 9 or more in these 60 games.

.....

(2)

(Total for Question 10 is 8 marks)

11 (a) Find the value of $\sqrt[3]{59.319}$

.....

(1)

(b) Find the value of 6^4

.....

(1)

(c) Work out the value of $\left(\frac{125.6}{4.7}\right)^2$

Write down all the figures on your calculator display.

.....

(2)

(d) Write your answer to part (c) correct to 3 significant figures.

.....

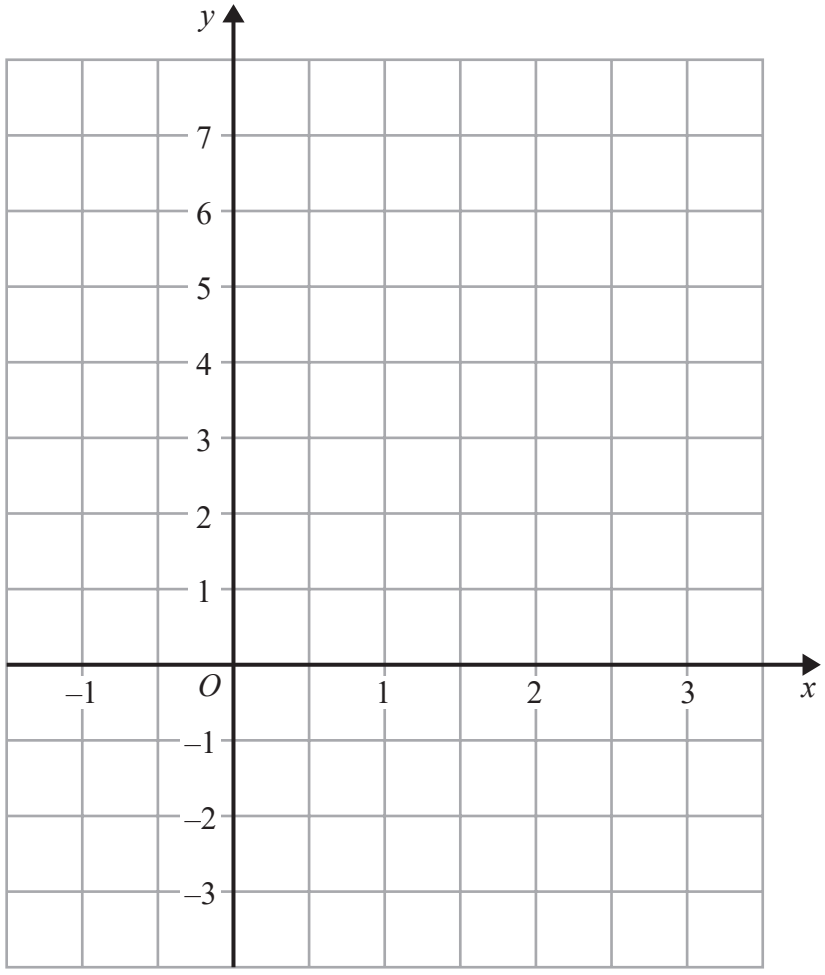
(1)

(Total for Question 11 is 5 marks)

12 (a) On the grid, draw

(i) the line $y = 1$

(ii) the graph of $y = 4 - 2x$ for values of x from -1 to 3



(4)

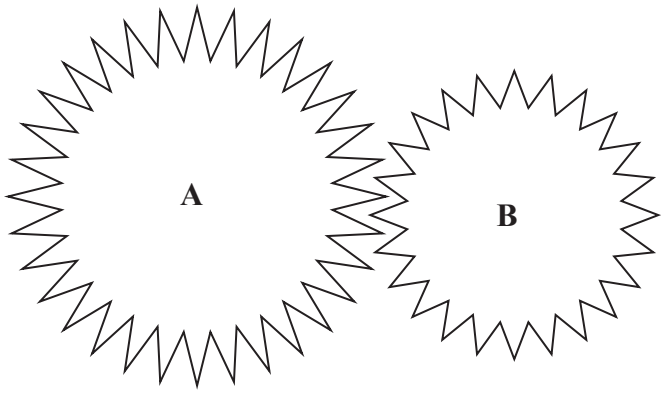
(b) Write down the coordinates of the point where the graph of $y = 4 - 2x$ crosses the line $y = 1$

(..... , ...)

(1)

(Total for Question 12 is 5 marks)

13 The diagram shows two cogs, **A** and **B**.



There are 32 teeth on cog **A**.
There are 24 teeth on cog **B**.

(a) Write down the ratio of the number of teeth on cog **A** to the number of teeth on cog **B**.
Give your ratio in its simplest form.

.....

(2)

The two cogs both rotate.
Cog **A** completes 12 full turns while cog **B** completes 16 full turns.

(b) Work out the number of full turns that cog **A** completes while cog **B** completes 60 full turns.

.....

(2)

(Total for Question 13 is 4 marks)

14 The diagram shows a solid triangular prism *ABCDEF*.

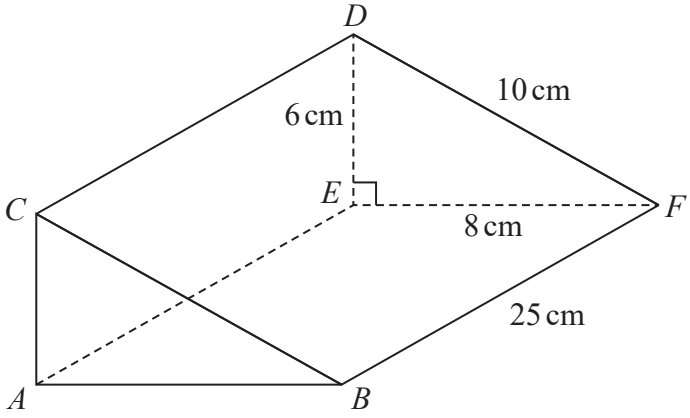


Diagram **NOT** accurately drawn

EF = 8 cm, *DE* = 6 cm, *DF* = 10 cm and *BF* = 25 cm.
Angle *DEF* = 90°

(a) Work out the area of triangle *DEF*.

..... cm^2

(2)

(b) Work out the volume of the prism.

..... cm^3

(2)

(c) Work out the total surface area of the prism.

..... cm^2

(3)

(Total for Question 14 is 7 marks)

15 The size of each exterior angle of a regular polygon is 24°

(a) Work out the number of sides of the polygon.

.....

(2)

Here is a pentagon.

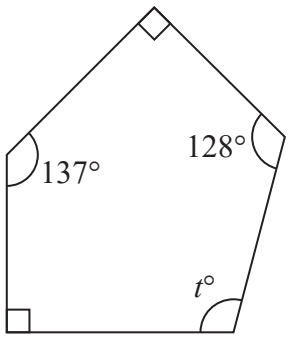


Diagram **NOT** accurately drawn

(b) Work out the value of t.

.....

(3)

(Total for Question 15 is 5 marks)

16 $\mathscr{E}$ = {fish in Jake's lake}
A = {fish of length greater than 20 cm}
B = {fish that weigh more than 1 kg}
C = {fish less than 1 year old}

A fish in Jake's lake is caught.
The fish is 2 years old, weighs 1.2 kg and is 19 cm in length.

(a) Write down the set, A or B or C, of which this fish is a member.

.....

(1)

(b) Describe in words fish that are members of the set $A \cup B$

.....

.....

(2)

$B \cap C = \varnothing$

(c) Explain what this statement tells us about the fish in Jake's lake.

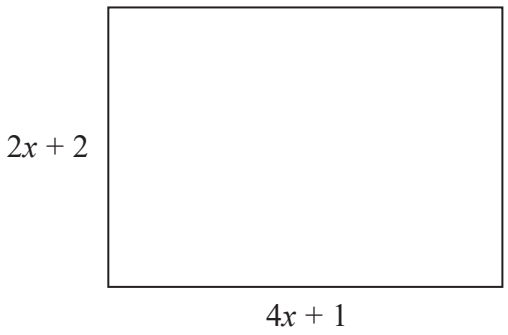
.....

.....

(1)

(Total for Question 16 is 4 marks)

17 The diagram shows a rectangle and an isosceles triangle.
All measurements are in centimetres.



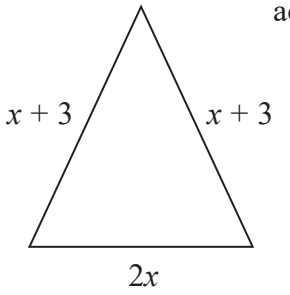


Diagram **NOT** accurately drawn

(a) Write down an expression in terms of x for

(i) the perimeter of the rectangle,

.....cm

(ii) the perimeter of the triangle.

.....cm

(2)

The perimeter of the rectangle is equal to 2 times the perimeter of the triangle.

(b) Work out the value of x.
Show clear algebraic working.

.....

(4)

(Total for Question 17 is 6 marks)

18 Marta breeds dogs.
32 dogs give birth to puppies.
The table shows information about the number of puppies born to each dog.

Number of puppies	Frequency
1 – 3	5
4 – 6	12
7 – 9	10
10 – 12	4
13 – 15	1

(a) Write down the modal class.

.....

(1)

(b) Work out an estimate for the mean number of puppies born to each dog.

.....

(4)

(Total for Question 18 is 5 marks)

19 Show that $3\frac{3}{8} \div 2\frac{1}{4} = 1\frac{1}{2}$

(Total for Question 19 is 3 marks)

20

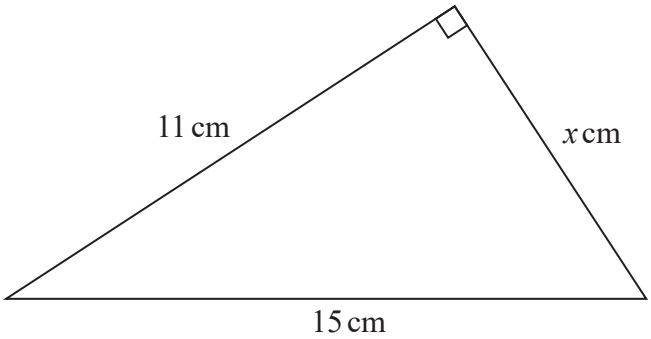


Diagram **NOT** accurately drawn

Work out the value of x.
Give your answer correct to 3 significant figures.

.....

(Total for Question 20 is 3 marks)

TOTAL FOR PAPER IS 100 MARKS

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