Pearson Edexcel International GCSE

Centre Number | Candidate Number

Mathematics A
Paper 1FR

Foundation Tier

Thursday 26 May 2016 – 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 ▶

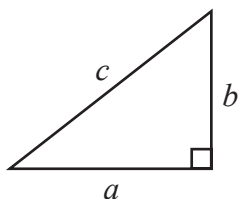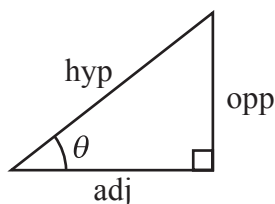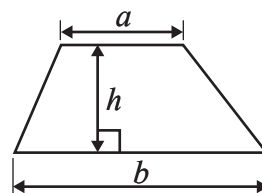**PEARSON**

FORMULAE SHEET – FOUNDATION TIER

Pythagoras'
Theorem
$a^2 + b^2 = c^2$

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

adj = hyp × cos θ
opp = hyp × sin θ
opp = adj × tan θ

Volume of prism = area of cross section × length

or $\sin\theta = \dfrac{\text{opp}}{\text{hyp}}$
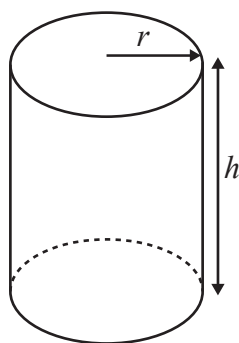
$\cos\theta = \dfrac{\text{adj}}{\text{hyp}}$

$\tan\theta = \dfrac{\text{opp}}{\text{adj}}$
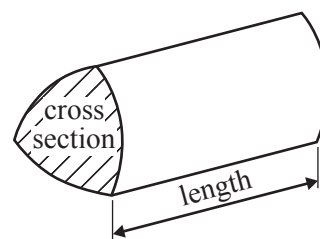
Circumference of circle = $2\pi r$

Area of circle = πr^2

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

Curved surface area
of cylinder = $2\pi rh$
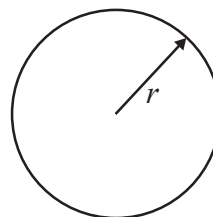
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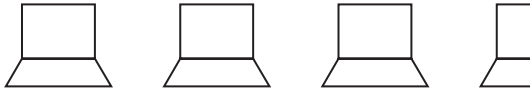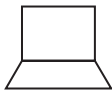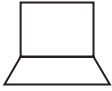
Answer ALL TWENTY FIVE questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 The pictogram gives information about the number of laptops sold from a shop for each of the first 3 weeks in April.

Week 1	
Week 2	
Week 3	
Week 4	

represents 8 laptops

(a) Write down the number of laptops sold from the shop in Week 1

....

(1)

The shop sold 32 laptops in Week 4

(b) Show this information on the pictogram.

(1)

(c) Work out the total number of laptops sold from the shop during the 4 weeks.

....

(2)

(Total for Question 1 is 4 marks)

2 The table shows the distance from London to each of three cities and the time taken by planes to fly from London to these cities.

City	Distance from London (km)	Time taken to fly
Manchester	237	1 hour
Moscow	2460	4 hours 40 minutes
New York	5570	6 hours 20 minutes

(a) Write the number 2460 in words.

....

(1)

(b) Write down the value of the 7 in 5570

....

(1)

(c) Write the number 237 correct to the nearest 10

....

(1)

The distance from London to New York is greater than the distance from London to Moscow.

(d) How much greater?

.... km

(1)

(e) Change 4 hours 40 minutes to minutes.

.... minutes

(1)

A plane flew from London to New York.
The plane left London at 02 50
The plane landed in New York 6 hours and 20 minutes after it had left London.

(f) What was the time **in London** when the plane landed in New York?

....

(1)

(Total for Question 2 is 6 marks)

3 *A*, *B*, *C* are points on a circle, centre *O*.
  AOB is a straight line.
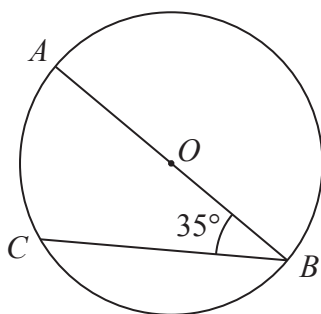
(i) Write down the mathematical name for the line *AB*

....

(ii) Write down the mathematical name for the line *BC*

....

(iii) Write down the mathematical name for an angle of 35°

....

(Total for Question 3 is 3 marks)

4 Complete the following sentences by writing a sensible metric unit on each of the dotted lines.

(a) (i) The length of a bus is 12 ....

(ii) The amount of milk in a full cup is 270 ....

(2)

(b) Change 8 kilograms into grams.

.... grams

(1)

(Total for Question 4 is 3 marks)

5 (a) Write these decimals in order of size.
Start with the smallest decimal.

0.62   0.5   0.043   0.06

....
(1)

(b) Write down the value of the 4 in the number 7.41

....
(1)

(c) Write down the number that is exactly halfway between 2.24 and 2.25

....
(1)

Here are four cards.
Each card has a number on it.

| 7 | | 8 | | 4 | | 3 |

These four cards are arranged to make the number 7843
The four cards can be rearranged to make other numbers.

(d) (i) Write down the smallest number that can be made using all four cards.

....

(ii) Write down the largest **even** number that can be made using all four cards.

....
(2)

(Total for Question 5 is 5 marks)

6
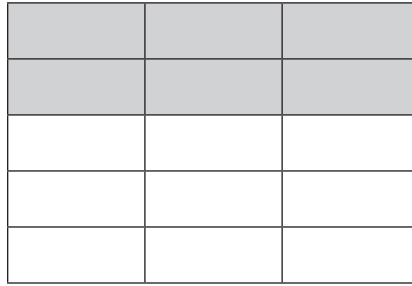
(a) What fraction of this shape is shaded?
   Write your fraction in its simplest form.

....
(2)

(b) Write $\dfrac{7}{25}$ as a percentage.

....%
(1)

(c) Write $\dfrac{3}{20}$ as a decimal.

....
(1)

42% of the houses in a street have gardens.

(d) What percentage of the houses in the street do **not** have gardens?

....%
(1)

(e) Write a number on the dotted line so that the calculation is correct.

$$\text{.........................} \div 4.7 = 1.5$$

(1)

(Total for Question 6 is 6 marks)

Turn over ▶

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

$$18 \quad 22 \quad 26 \quad 30 \quad 34$$

(a) Write down the next two terms of the sequence.

....

(2)

(b) Explain how you found your terms.

....

(1)

(c) Work out the 20th term of the sequence.

....

(2)

(Total for Question 7 is 5 marks)

8 Here is a solid prism.

Diagram **NOT**
accurately drawn
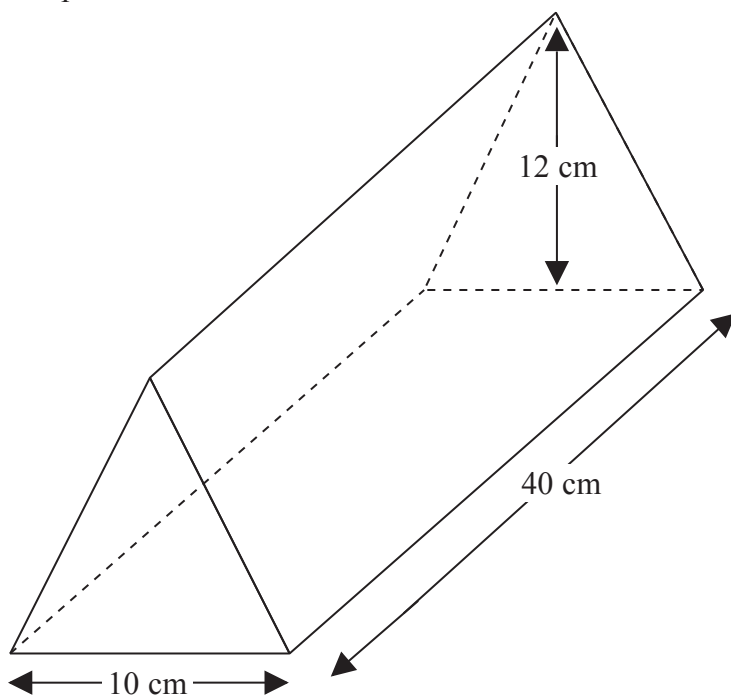
12 cm

40 cm

10 cm

The cross section of the prism is a triangle.

(a) How many edges has this prism?

....
(1)

(b) How many faces has this prism?

....
(1)

The base of the triangle is 10 cm.
The height of the triangle is 12 cm.
The length of the prism is 40 cm.

(c) Work out the volume of the prism.

....cm^3
(2)

(Total for Question 8 is 4 marks)

9
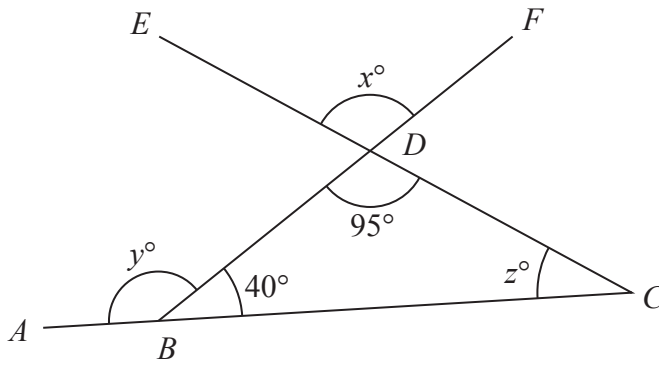
Diagram **NOT** accurately drawn

ABC, *CDE* and *BDF* are straight lines.

(a) Write down the value of *x*.

$x =$ ....

(1)

(b) (i) Find the value of *y*.

$y =$ ....

(ii) Give a reason for your answer.

....

....

(2)

(c) Find the value of *z*.

$z =$ ....

(2)

(Total for Question 9 is 5 marks)

10 The table shows information about the number of pets owned by each of 25 people.

Number of pets	Frequency
1	10
2	8
3	4
4	2
5	1

(a) Work out the range of the number of pets.

....

(2)

(b) Work out the median number of pets.

....

(2)

(Total for Question 10 is 4 marks)

11 (a) Simplify $8e + 2f - 11e + 3f$

....

(2)

(b) Expand $2y(3y - 7)$

....

(2)

(Total for Question 11 is 4 marks)

P 4 6 2 2 6 A 0 1 1 2 4

12 Here is a number machine.

input ——→ | divide by 3 | ——→ | subtract 5 | ——→ output
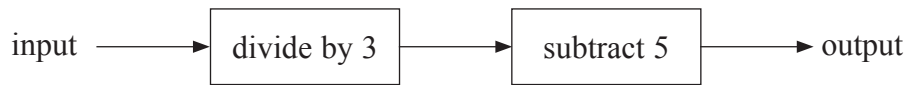
(a) Work out the output when the input is 21

....

(1)

(b) Work out the input when the output is 30

....

(2)

The input is x.

(c) Find an expression, in terms of x, for the output.

....

(2)

(Total for Question 12 is 5 marks)

13

| 2 | 8 | 9 | 27 | 40 | 56 |

From the numbers in the box, write down

(i) the square number

....

(ii) the multiple of 7

....

(Total for Question 13 is 2 marks)

14 (a) Work out the value of 2^5

....

(1)

(b) Find the cube root of 64

....

(1)

(Total for Question 14 is 2 marks)

15 (a) $A = 2p + 3q$

   Work out the value of A when $p = -5$ and $q = 7$

   $A =$ ....

(b) Solve $5(x - 4) = 14$

   $x =$ ....

   (2)

   (Total for Question 15 is 4 marks)

16 There are 50 marbles in a bag.

35 of the marbles are brown.
5 of the marbles are green.
The rest of the marbles are purple.

Seppi takes at random a marble from the bag.

(a) (i) What is the probability that the marble is green?

....

(ii) What is the probability that the marble is purple?

....

(3)

Seppi replaces her marble.

Otti takes at random a marble from the bag.
He records the colour of the marble and puts the marble back in the bag.

He does this 300 times.

(b) Work out an estimate for the number of brown marbles he takes.

....

(2)

(Total for Question 16 is 5 marks)

17 Rafael and Roger played tennis against each other 30 times.
Each of the times they played, either Rafael won or Roger won.
The ratio of the number of times Rafael won to the number of times Roger won is $7:3$

(a) Work out the number of times Rafael won.

....

(2)

In a school, there are 75 girls in the tennis squad.
The ratio of the number of boys in the tennis squad to the number of girls in the tennis squad is $4:3$

(b) Work out the number of boys in the tennis squad.

....

(2)

(Total for Question 17 is 4 marks)

18 Li throws a 6-sided biased dice once.

The table shows the probability that the dice will land on 1, 2, 3, 5 or 6

Number	1	2	3	4	5	6
Probability	0.15	0.1	0.05		0.2	0.15

(a) Write down the probability that the dice will land on 7

....

(1)

(b) Work out the probability that the dice will land on 4

....

(2)

(Total for Question 18 is 3 marks)

19 In a sale, normal prices are reduced by 8%

(a) The normal price of a jacket is £28

Work out the price of the jacket in the sale.

£ ....

(3)

(b) In the sale, the price of a shirt decreases by £3

Work out the normal price of the shirt.

£ ....

(3)

(Total for Question 19 is 6 marks)

20 (a) Solve the inequalities $-4 < 3x + 5 \leqslant 11$

....

(b) Write down the integer values of x which satisfy $-4 < 3x + 5 \leqslant 11$
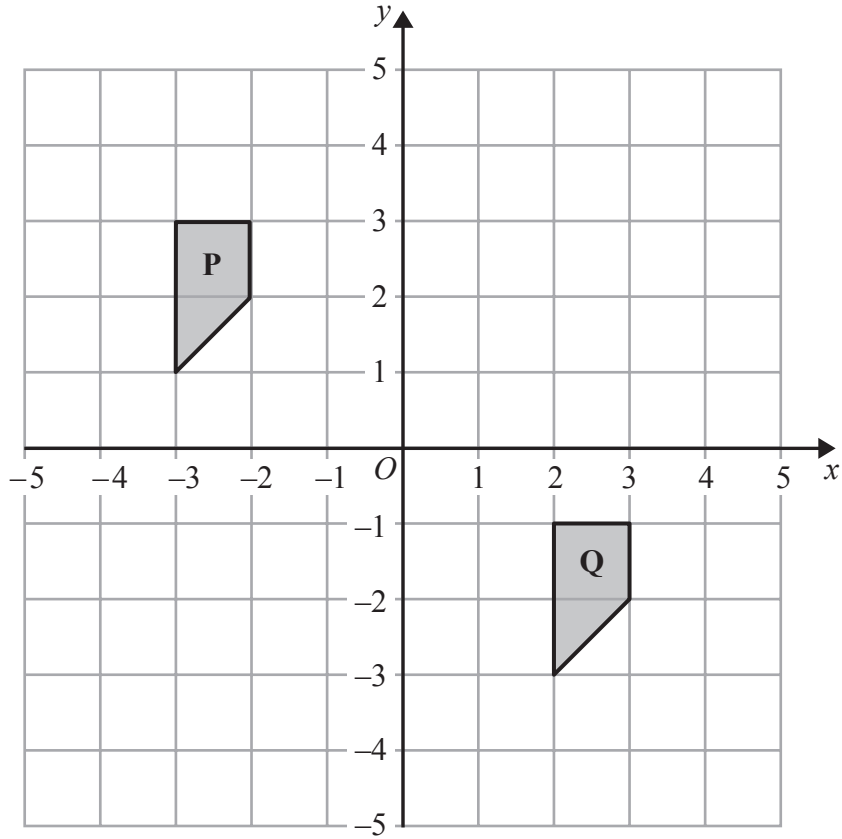
....

(Total for Question 20 is 5 marks)

21 Write 792 as a product of its prime factors.
Show your working clearly.

....

(Total for Question 21 is 3 marks)

22

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

....

....

(2)

(b) Rotate shape **Q** 90° clockwise about (1,0)
Label the new shape **R**.

(2)

(Total for Question 22 is 4 marks)

23

3.2 cm

Diagram **NOT** accurately drawn

x cm

14.6 cm
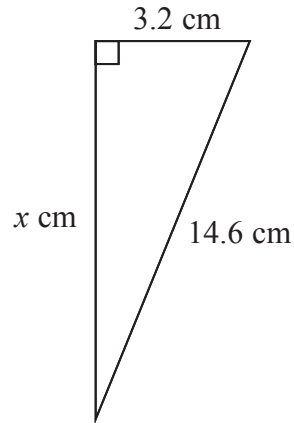
Calculate the value of *x*.
Give your answer correct to 3 significant figures.

x = ...

(Total for Question 23 is 3 marks)

---

24 Work out the size of an exterior angle of a regular polygon with 8 sides.

.... °

(Total for Question 24 is 2 marks)

25 Julie asked 50 children how many exercise sessions they each took part in last month.
The table shows information about her results.

Number of exercise sessions	Frequency
0 to 6	13
7 to 13	10
14 to 20	16
21 to 27	7
28 to 34	4

Calculate an estimate for the total number of exercise sessions the children took part in last month.

....

(Total for Question 25 is 3 marks)

TOTAL FOR PAPER IS 100 MARKS

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