Write your name here

Surname		Other names

Pearson Edexcel International GCSE

Centre Number

Candidate Number

Mathematics A

Level 1/2
Paper 2F

Foundation Tier

Thursday 7 June 2018 – Morning
Time: 2 hours

Paper Reference
4MA1/2F

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.
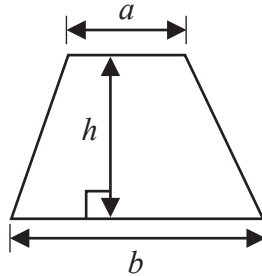
Turn over ▶

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Pearson

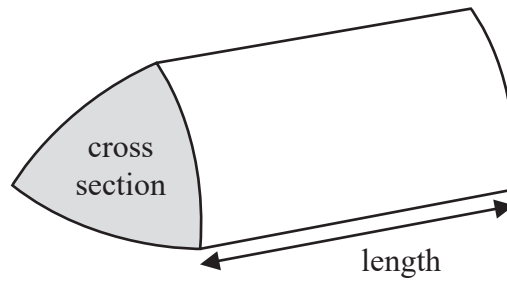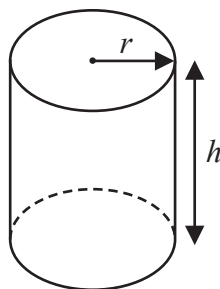**Area of trapezium** $= \dfrac{1}{2}(a + b)h$

Volume of prism = area of cross section × length

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

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

Answer ALL TWENTY FOUR questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 (a) Write 0.63 as a fraction.

....
(1)

(b) Write 46 821 correct to the nearest 100

....
(1)

(c) Write 73.654 correct to 1 decimal place.

....
(1)

(d) Write 0.09 as a percentage.

....%
(1)

(Total for Question 1 is 4 marks)

2 Daniel has five bags of coloured sweets.
He picks at random a sweet from each bag.
The table shows the probability that the sweet he picks from each bag is red.

Bag	A	B	C	D	E
Probability of red	0.7	0.9	0.5	1	0.2

(a) From which bag is Daniel least likely to pick a red sweet?

....

(1)

(b) Which bag contains only red sweets?

....

(1)

(c) From which bag is Daniel equally likely to pick a red sweet as a sweet of another colour?

....
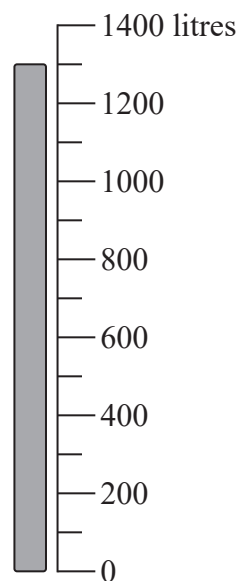
(1)

(Total for Question 2 is 3 marks)

3 Joseph buys some heating oil.
He puts it in his oil tank.

The scales show the numbers of litres of oil in the tank immediately before and immediately after Joseph puts the oil in the tank.
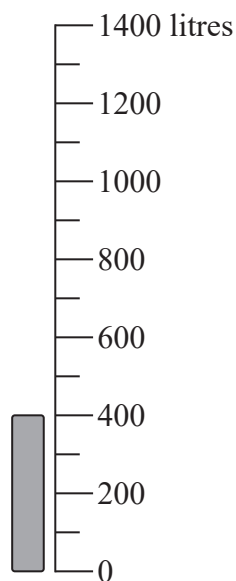
before   **after**
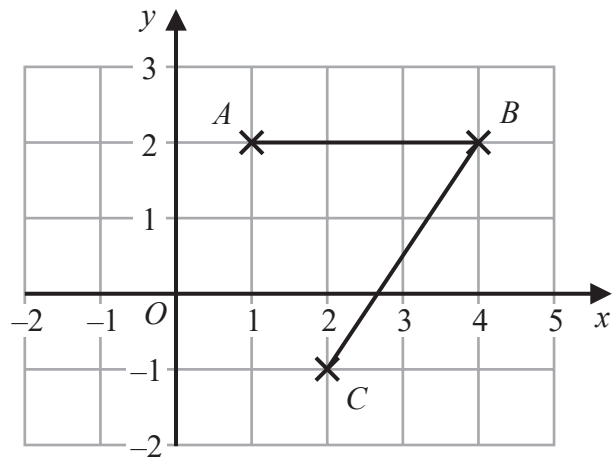
The oil Joseph buys costs 0.40 euros per litre.

Work out the total cost of the oil that Joseph buys.

.... euros

(Total for Question 3 is 3 marks)

Turn over ▶

4 The diagram shows points *A*, *B* and *C* on a square grid.

(a) Write down the coordinates of *C*.

(........................... , ...)

(1)

(b) Measure the length of *BC*.
Give your answer in centimetres.

.... cm

(1)

(c) On the grid, mark with a cross (✕) the point *D* so that *ABCD* is a parallelogram.
Label this point *D*.

(1)

(Total for Question 4 is 3 marks)

5 (a) Write down a multiple of 8 that is between 20 and 50

....
(1)

There is only one prime number that is an even number.

(b) Write down this number.

....
(1)

Shreya says that 57 is a prime number.

(c) Is Shreya correct?
Give a reason for your answer.

....

....
(1)

(Total for Question 5 is 3 marks)

6 Here is a sequence of patterns made from dots.
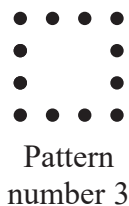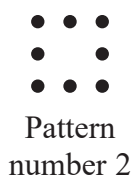
Pattern number 1   Pattern number 2   Pattern number 3   Pattern number 4

(a) Draw Pattern number 4 in the space above.

(b) Complete the table.

Pattern number	1	2	3	4	5
Number of dots	4	8	12		

(1)

(c) Work out the number of dots in Pattern number 13

....

(2)

(d) Find an expression, in terms of n, for the number of dots in Pattern number n.

....

(1)

There are fewer than 90 dots in Pattern number k.

(e) What is the largest possible value of k?

....

(2)

(Total for Question 6 is 7 marks)

7 (a) Write $7 \times 7 \times 7 \times 7 \times 7$ as a power of 7

....

(1)

(b) Show that 64 is both a square number and a cube number.

(2)

(c) Find the value of 11^3

....

(1)

(d) Find the value of $\sqrt{98.01}$

....

(1)

(Total for Question 7 is 5 marks)

8 (a) Find the value of $25 - 4g$ when $g = -3$

....

(2)

(b) Expand and simplify $x(2x + 1) + 3(x - 2) + 7$

....

(3)

(Total for Question 8 is 5 marks)

9 *R* and *S* are points on a circle with centre *O*.
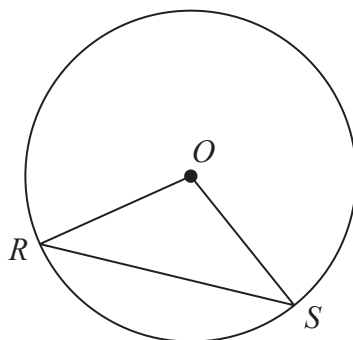
(a) On the diagram above, shade a segment of the circle.

(1)

(b) Write down the mathematical name of the straight line *RS*.

....

(1)

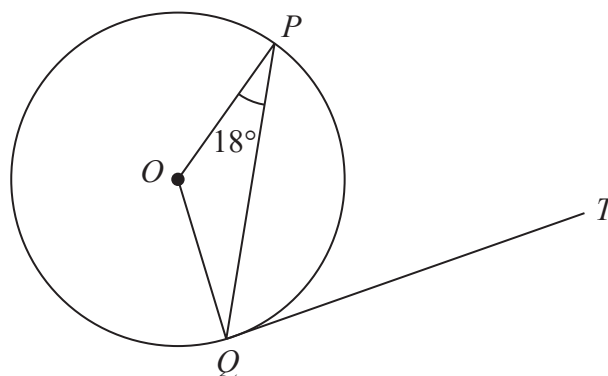In the diagram below, *P* and *Q* are points on a circle with centre *O*.

Diagram **NOT** accurately drawn

QT is a tangent to the circle.
Angle *OPQ* = 18°

(c) Work out the size of angle *PQT*.
Give a reason for each stage of your working.

.... °

(3)

(Total for Question 9 is 5 marks)

P 5 4 6 9 3 A 0 1 0 2 4

10 Last Thursday, 135 students each bought one item of fruit.
The table shows information about the 135 items of fruit they bought.

Fruit	apple	pear	orange	banana	peach
Number of students	36	15	27	33	24

One of the 135 students is chosen at random.

(a) Find the probability that this student bought an apple or a banana.

....

(2)

A pie chart is drawn for the information in the table.

(b) Work out the size of the angle in the pie chart for oranges.

°
....

(2)

(Total for Question 10 is 4 marks)

11 (a) Work out the value of $\dfrac{10.4}{5.1 - 2.7} + \dfrac{6.8 - 3.2}{9.5}$

Give your answer as a decimal.
Write down all the figures on your calculator display.
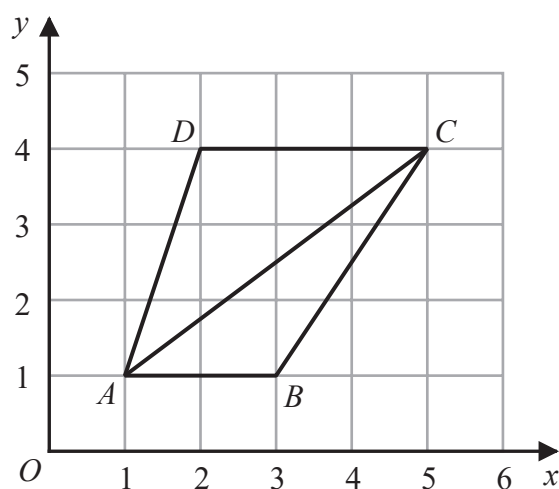
....

(2)

(b) Give your answer to part (a) correct to 3 significant figures.

....

(1)

(Total for Question 11 is 3 marks)

12 The diagram shows a quadrilateral *ABCD* on a centimetre grid.

(a) Work out the area of triangle *ABC*.
You must include the units with your answer.

....

(3)

(b) Give a reason why angle *ACD* is equal to angle *CAB*.

....

(1)

(c) Write down an equation for the straight line that passes through *D* and *C*.

....

(1)

(Total for Question 12 is 5 marks)

13 Tenzin walks in the mountains.
She has a rule to estimate the temperature at different heights on a mountain.

> Temperature decreases by 2 °C for every increase of 300 metres in height.

The temperature at a height of 800 metres on a mountain is 6 °C.

(a) Use Tenzin's rule to work out an estimate of the temperature at a height of 2000 metres on the mountain.

.... °C

(3)

Tenzin also has a rule to estimate the time it will take her to complete a walk in the mountains.

She uses
     an average speed of 5 km/h for the distance she will walk
and then
     adds on 1 minute for every increase of 10 metres in height.

Tenzin plans to walk 12 km in the mountains with an increase of 800 metres in height.

(b) Use Tenzin's rule to work out an estimate for the time it will take her to complete this walk.
Give your answer in hours and minutes.

.... hours .... minutes

(3)

(Total for Question 13 is 6 marks)

14 Javier has two sets of cards.
Each set contains 4 cards, one marked **A**, one marked **B**, one marked **C** and one marked **D**.

Javier is going to take at random one card from each set.
The table shows all possible pairs of cards that Javier could take.

Set 2

Set 1		A	B	C	D
	A	AA	AB	AC	AD
	B	BA	BB	BC	BD
	C	CA	CB	CC	CD
	D	DA	DB	DC	DD

(a) Find the probability that Javier will take at least one card marked **C**.

....

(2)

Javier is going to take at random one card from each set, note the letter on each card and replace the cards.

He is going to do this a total of 80 times.

(b) Work out an estimate for the number of times that Javier will take at least one card marked **C**.

....

(2)

(Total for Question 14 is 4 marks)

15
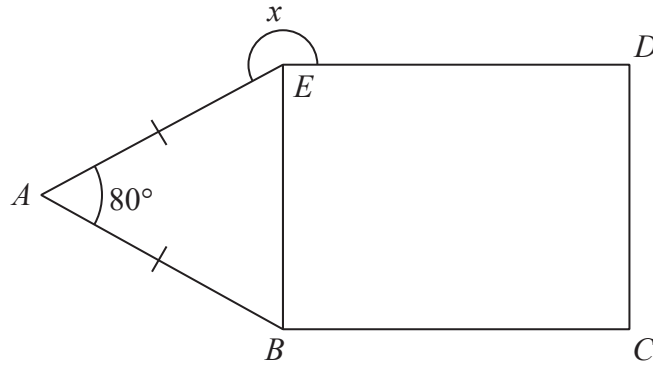

Diagram **NOT** accurately drawn

BCDE is a rectangle.
ABE is an isosceles triangle.

AB = AE
Angle *BAE* = 80°

Work out the size of angle *x*.

....°

(Total for Question 15 is 3 marks)

Turn over ▶

16 Work out the difference between the largest share and the smallest share when 3450 yen is divided in the ratios 2 : 6 : 7

.... yen

(Total for Question 16 is 3 marks)

17 Gopal is paid 20 000 rupees each month.
Jamuna is paid 19 200 rupees each month.

Gopal and Jamuna are both given an increase in their monthly pay.
After the increase, they are both paid the same amount each month.

Gopal was given an increase of 8%

Work out the percentage increase that Jamuna was given.

....%

(Total for Question 17 is 4 marks)

18 (a) Make a the subject of the formula $M = ac - bd$

....

(b) Solve the inequality $5x - 4 < 39$

....

(2)

(c) Factorise fully $18e^2f^3 - 12e^3f$

....

(2)

(Total for Question 18 is 6 marks)

P 5 4 6 9 3 A 0 1 7 2 4

Turn over ▶

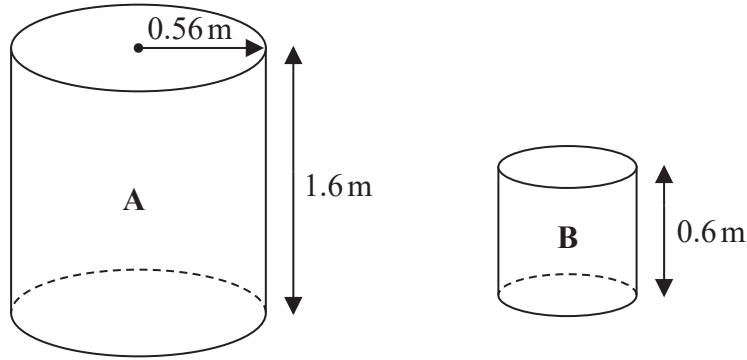**19** The diagram shows two cylinders, **A** and **B**.

Diagram **NOT** accurately drawn

Cylinder **A** has height 1.6 m and radius 0.56 m.

(a) Work out the curved surface area of cylinder **A**.
Give your answer in m² correct to 3 significant figures.

.... m²

(2)

Cylinder **B** is mathematically similar to cylinder **A**.
The height of cylinder **B** is 0.6 m.

(b) Work out the radius of cylinder **B**.

.... m

(2)

(Total for Question 19 is 4 marks)

20 Show that $3\dfrac{4}{7} - 1\dfrac{5}{8} = 1\dfrac{53}{56}$

(Total for Question 20 is 3 marks)

21

52°

12.6 cm

x cm
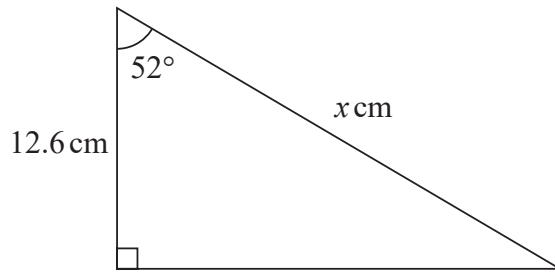
Diagram **NOT**
accurately drawn

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

$x =$ ....

(Total for Question 21 is 3 marks)

22 The students in Class A and in Class B take the same examination.

There are 28 students in Class A and 32 students in Class B.
The mean score for all the students in both classes is 72.6
The mean score for the students in Class A is 75

(a) Work out the mean score for the students in Class B.

....
(4)

The lowest score in Class A is 39
The range of scores for Class A is 57
The lowest score in Class B is 33
The range of scores for Class B is 60

(b) Find the range of scores for all the students in both classes.

....
(3)

(Total for Question 22 is 7 marks)

23 Solve the simultaneous equations

$$x + y = 15$$
$$7x - 5y = 3$$

Show clear algebraic working.

$x = $ ....

$y = $ ....

(Total for Question 23 is 3 marks)

24 $\dfrac{8}{2^7} = 2^n$

(a) Find the value of n.

$n =$ ....
(2)

$(13^{-6})^4 \times 13^5 = 13^k$

(b) Find the value of k.

$k =$ ....
(2)

(Total for Question 24 is 4 marks)

TOTAL FOR PAPER IS 100 MARKS

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