Please check the examination details below before entering your candidate information

Candidate surname	Other names

Pearson Edexcel International GCSE

Centre Number | Candidate Number

Tuesday 15 January 2019

Morning (Time: 2 hours) | Paper Reference **4MA1/2FR**

Mathematics A

Level 1/2
Paper 2FR
Foundation Tier

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 ▶

P59023A

1/1/1/

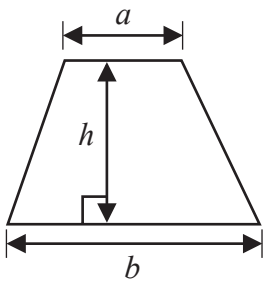
P 5 9 0 2 3 A 0 1 2 4

Pearson

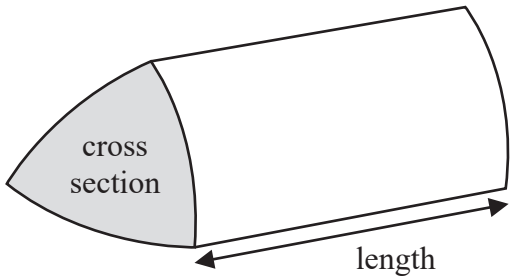
International GCSE Mathematics

Formulae sheet – Foundation Tier

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

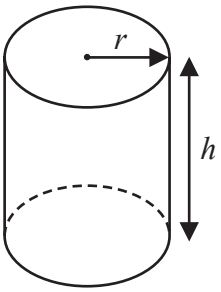


Volume of prism = area of cross section × length



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

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



Answer ALL TWENTY FIVE questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

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

7.831 7.04 7.002 7.9 7.013

(1)

(b) Write 7% as a decimal.

(1)

(c) Write 0.47 as a fraction.

(1)

(d) Write 0.63 as a percentage.

%

(1)

(e) Write a number in the box to make the calculation correct.

$0.003 \times \square = 9$

(1)

(Total for Question 1 is 5 marks)

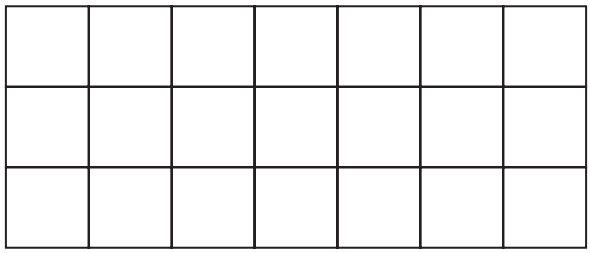
2 Amelie is using ribbon to make decorations.

She has 7 metres of ribbon.
Each decoration needs 45 centimetres of ribbon.

What is the greatest number of decorations that Amelie can make?

(Total for Question 2 is 3 marks)

3 (a) Shade $\frac{3}{7}$ of the rectangle.



(1)

(b) Write $\frac{23}{3}$ as a mixed number.

(1)

(c) Find $\frac{2}{5}$ of 60 cm.

cm

(2)

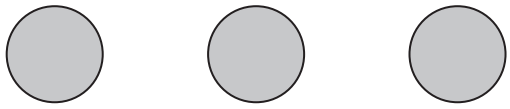
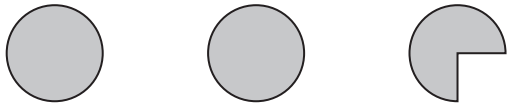
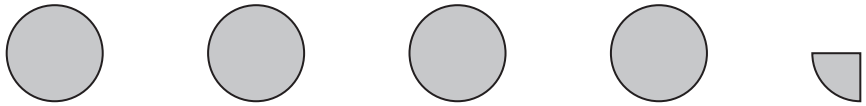
Claude says that $\frac{1}{6}$ is exactly halfway between $\frac{1}{4}$ and $\frac{1}{8}$

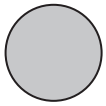
(d) Is Claude correct?
You must give a reason for your answer.

(2)

(Total for Question 3 is 6 marks)

4 The pictogram gives information about the number of cakes Peony baked on Monday, on Tuesday, on Wednesday and on Thursday.

Monday	
Tuesday	
Wednesday	
Thursday	
Friday	

 represents 8 cakes

(a) How many cakes did Peony bake on Wednesday?

(1)

Peony baked more cakes on Thursday than on Monday.

(b) How many more?

(1)

Peony baked 20 cakes on Friday.

(c) Show this information on the pictogram.

(1)

(Total for Question 4 is 3 marks)

5 The table gives the midnight temperatures on 1st January for five cities in the USA.

City	Midnight temperature
Boston	–5 °C
Philadelphia	–4 °C
Orlando	10 °C
Chicago	–6 °C
Phoenix	8 °C

Here are the temperatures in °C.

–5 –4 10 –6 8

(a) Write these numbers in order of size.
Start with the smallest number.

(1)

(b) Work out the difference between the midnight temperature in Orlando and the midnight temperature in Boston.

°C

(1)

(c) Work out the temperature that is exactly halfway between 8 °C and –6 °C.

°C

(1)

On 1st January the midnight temperature in Minneapolis was 10 °C lower than the midnight temperature in Philadelphia.

(d) Work out the midnight temperature in Minneapolis.

°C

(1)

(Total for Question 5 is 4 marks)

6 80 students studying sciences were asked which science subject they liked the best.

Some information about the results is shown in the two-way table.

	Biology	Chemistry	Physics	Total
Boys	25		7	
Girls		4		43
Total	31			80

(a) Complete the two-way table.

(3)

One of the students is picked at random.

(b) Write down the probability that this student is a girl.

(1)

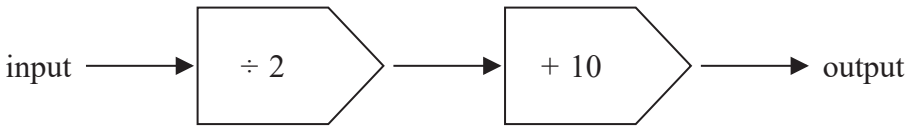
One of the girls is picked at random.

(c) Write down the probability that this girl likes Chemistry the best.

(2)

(Total for Question 6 is 6 marks)

7 Here is a number machine.



(a) Work out the output when the input is 8

(1)

(b) Work out the input when the output is 120

(2)

(Total for Question 7 is 3 marks)

8 A train journey started at 17 50 and finished at 02 25 the next day.

How long did the train journey take?
Give your answer in hours and minutes.

hours minutes

(Total for Question 8 is 2 marks)

9 Pierre bought

2 cups of coffee at 2.10 euros a cup
2 cups of tea at 1.80 euros a cup
and 3 croissants

Pierre paid with a 20 euro note.
He received 8.75 euros change.

The cost of each croissant was the same.

Work out the cost of 1 croissant.

euros

(Total for Question 9 is 3 marks)

10 Here is a sketch of triangle *ABC*.

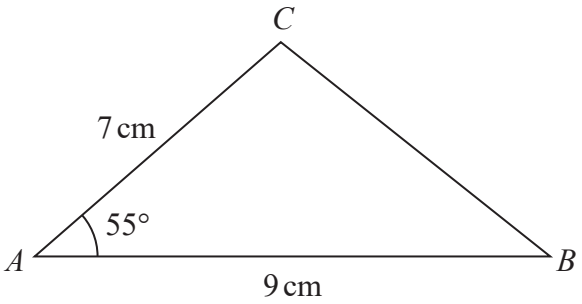
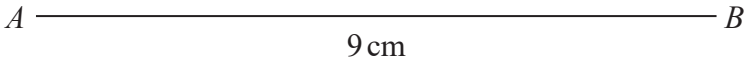


Diagram **NOT** accurately drawn

In the space below, make an accurate drawing of triangle *ABC*.
The line *AB* has been drawn for you.



(Total for Question 10 is 2 marks)

11 (a) Factorise $3x^2 - x$

(1)

(b) Expand $4(2y + 3)$

(1)

$C = 5a + 4d$

(c) Work out the value of C when $a = -3$ and $d = 6$

$C =$

(2)

$P = 3t^2 + 7t$

(d) Work out the value of P when $t = -4$

$P =$

(2)

(Total for Question 11 is 6 marks)

12 The diagram shows the plan of the floor in a room.

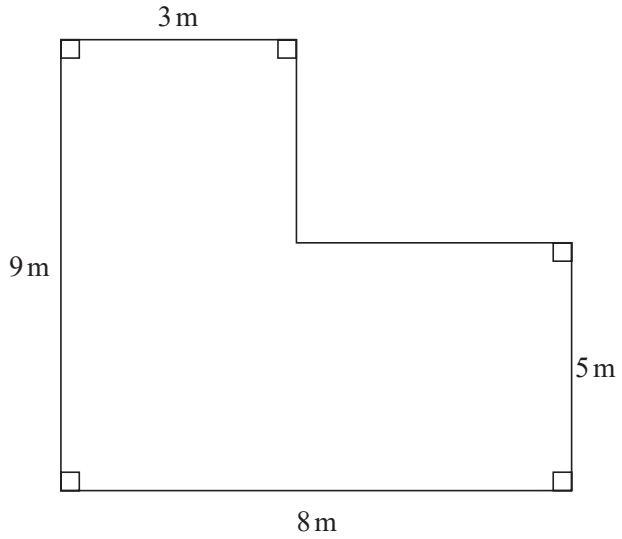


Diagram **NOT** accurately drawn

Alonso is going to cover the floor once with polish.
He buys some tins of polish.

Each tin has enough polish to cover 14 m^2 of the floor.
Each tin costs 9.59 euros.

Work out the total cost of the tins that Alonso needs to buy.

euros

(Total for Question 12 is 5 marks)

13 (a) Solve $7x + 3 = x - 18$

$x =$

(2)

(b) Make w the subject of $t = 7w + 3$

(2)

Pencils cost 2 dollars each.
Rulers cost 3 dollars each.

Edith buys p pencils and r rulers.
The total cost is T dollars.

(c) Write down a formula for T in terms of p and r.

(3)

(Total for Question 13 is 7 marks)

14

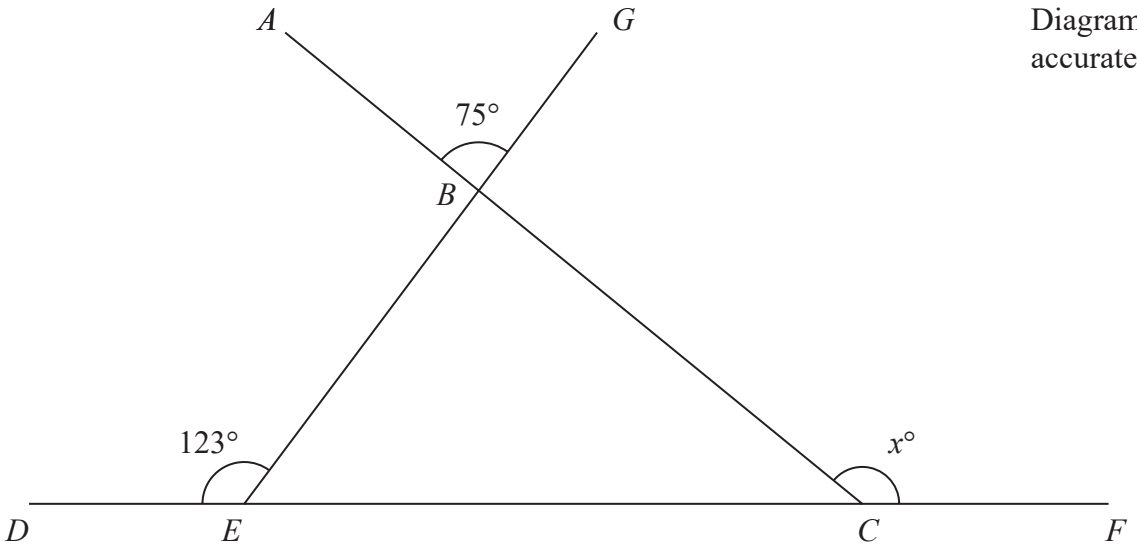


Diagram **NOT** accurately drawn

ABC, *DECF* and *EBG* are straight lines.

Work out the value of x.
Give a reason for each stage of your working.

$x =$

(Total for Question 14 is 4 marks)

15 The table gives information about the number of days that 100 cars were in an airport car park.

Number of days (d)	Frequency
$0 < d \leqslant 4$	16
$4 < d \leqslant 8$	18
$8 < d \leqslant 12$	19
$12 < d \leqslant 16$	27
$16 < d \leqslant 20$	20

(a) Write down the modal class.

(1)

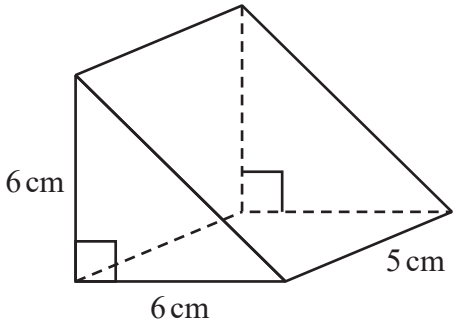
(b) Work out an estimate for the mean number of days.

days

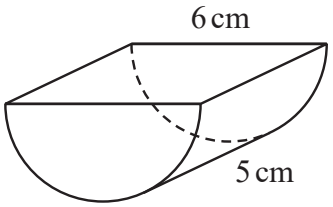
(4)

(Total for Question 15 is 5 marks)

16 The diagram shows two solid toy bricks, Brick **A** and Brick **B**.



Brick **A**



Brick **B**

Diagram **NOT** accurately drawn

Brick **A** is a triangular prism of length 5 cm.
The cross section of Brick **A** is an isosceles right-angled triangle with equal sides of length 6 cm.

Brick **B** is half a cylinder of length 5 cm.
The semicircular cross section of Brick **B** has diameter 6 cm.

The volume of Brick **A** is greater than the volume of Brick **B**.

How much greater?
Give your answer correct to 1 decimal place.

cm^3

(Total for Question 16 is 4 marks)

17 Here are the first five terms of a number sequence S.

10 16 22 28 34

(a) Find an expression, in terms of n, for the nth term of this sequence.

(2)

The nth term of a sequence T is given by $n^2 - 3$

There are numbers that are terms in both the sequence S and the sequence T.

(b) Find one of these numbers.

(2)

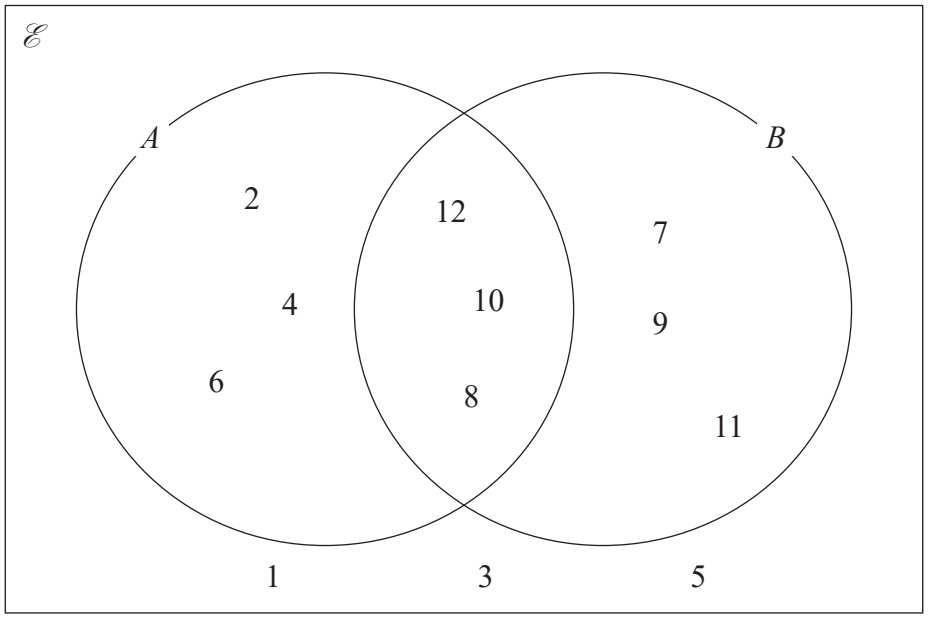
(Total for Question 17 is 4 marks)

18 On Saturday, Jacob walked 10 800 steps.
On Sunday, he walked 7% more steps than on Saturday.

Work out how many steps Jacob walked on Sunday.

(Total for Question 18 is 3 marks)

19 Here is a Venn diagram with $\mathscr{E}$ = {whole numbers from 1 to 12}



(a) List the numbers that are in set A

(1)

(b) List the numbers that are in set $A \cap B$

(1)

(c) List the numbers that are in set $(A \cup B)'$

(1)

One of the numbers in the Venn diagram is chosen at random.

(d) Find the probability that this number is in set $A \cup B$

(2)

(Total for Question 19 is 5 marks)

20 The length of a line is 12.3 cm, correct to 1 decimal place.

(a) Write down the upper bound of the length of the line.

cm

(1)

(b) Write down the lower bound of the length of the line.

cm

(1)

(Total for Question 20 is 2 marks)

21 Omar invests 6000 dirham for 4 years in a savings account.
He will get 1.5% per year compound interest.

Work out the total amount of interest Omar will have received by the end of 4 years.
Give your answer correct to the nearest dirham.

dirham

(Total for Question 21 is 3 marks)

22 The diagram shows a trapezium.

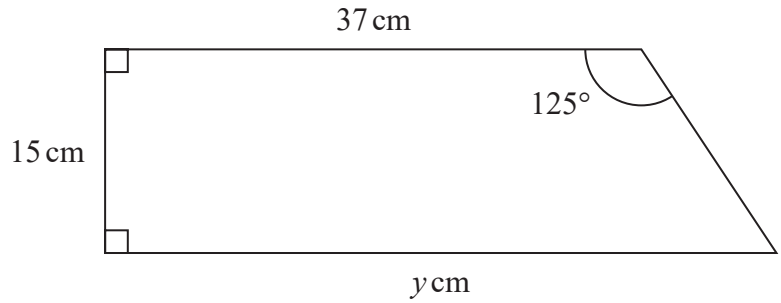


Diagram **NOT** accurately drawn

Work out the value of y.
Give your answer correct to 1 decimal place.

$y =$

(Total for Question 22 is 4 marks)

23

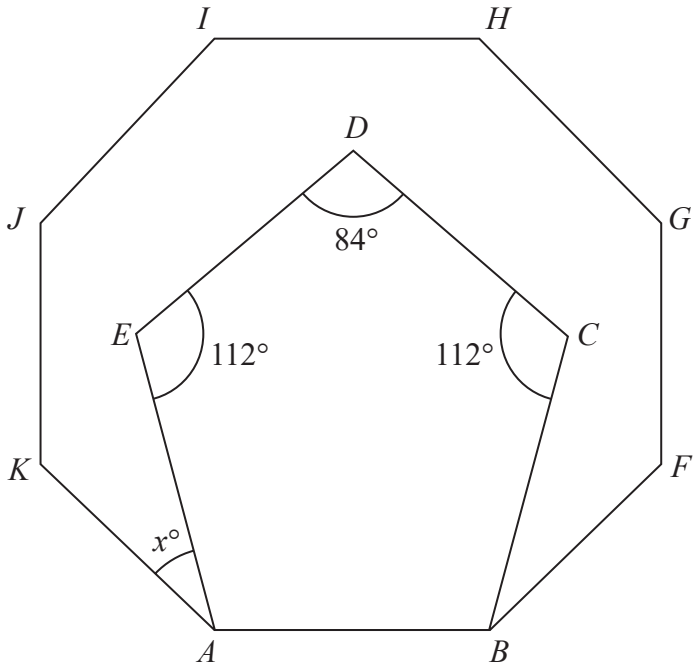


Diagram **NOT** accurately drawn

Pentagon *ABCDE* is drawn inside the regular octagon *ABFGHIJK*.
The pentagon has exactly one line of symmetry.

Work out the value of x.

$x =$

(Total for Question 23 is 4 marks)

24 Carlos, Flavia and Tazia shared £861 between themselves.

The amount of money Flavia got is 65% of the amount of money Carlos got.
The amount of money Tazia got is 22% **more** than the amount of money Carlos got.

Work out how much money Carlos got.

£

(Total for Question 24 is 3 marks)

25 (a) Factorise fully $12d^2e + 16d^2e^2$

(2)

(b) Simplify fully $\dfrac{15k^4m^3}{5km^2}$

(2)

(Total for Question 25 is 4 marks)

TOTAL FOR PAPER IS 100 MARKS