Please check the examination details below before entering your candidate information

Candidate surname	Other names

Pearson Edexcel International GCSE

Centre Number | Candidate Number

Monday 7 January 2019

Morning (Time: 2 hours) | Paper Reference **4MA0/1F**

Mathematics A

Paper 1F
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 ▶

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5/5/6/

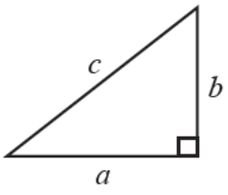
P 5 5 6 4 0 A 0 1 2 0

Pearson

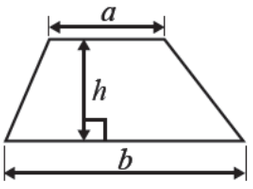
International GCSE MATHEMATICS

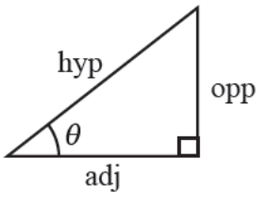
FORMULAE SHEET – FOUNDATION TIER

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



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





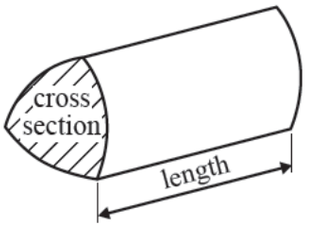
adj = hyp × cos θ
opp = hyp × sin θ
opp = adj × tan θ

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

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

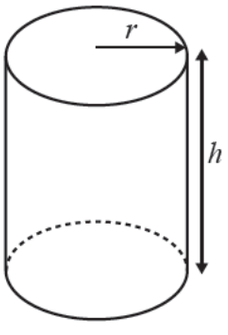
$\tan\theta = \frac{\text{opp}}{\text{adj}}$

Volume of prism = area of cross section × length



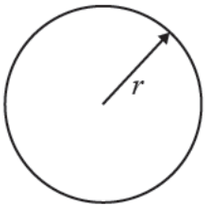
Circumference of circle $= 2\pi r$

Area of circle $= \pi r^2$



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

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



Answer ALL TWENTY THREE questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 The table gives information about the population, to the nearest thousand, of each of six capital cities in 2012

Capital city	Population
Bangkok	8 249 000
Hanoi	3 399 000
London	8 174 000
Madrid	3 234 000
Nairobi	2 666 000
Rome	2 793 000

(a) Which of these capital cities had the least population in 2012?

(1)

(b) Write down the value of the 8 in the number 8 249 000

(1)

(c) Work out the difference between 2 793 000 and 2 666 000

(1)

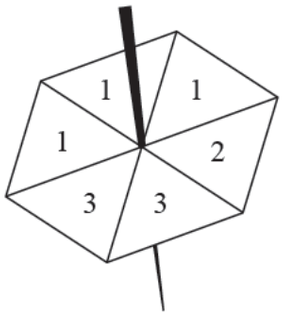
In 2012 the population of Washington DC was 601 723

(d) Write 601 723 correct to the nearest thousand.

(1)

(Total for Question 1 is 4 marks)

2 Here is a fair 6-sided spinner.

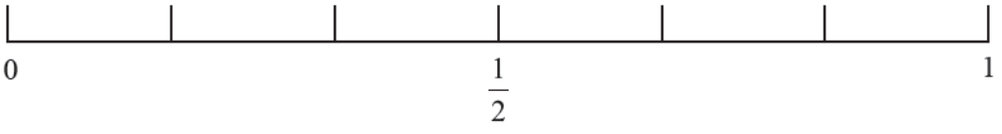


The spinner is spun once.

(a) On which number is the spinner least likely to land?

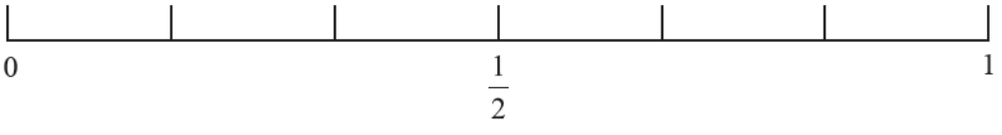
(1)

(b) On the probability scale below, mark with a cross (×) the probability that the spinner will land on a number less than 5



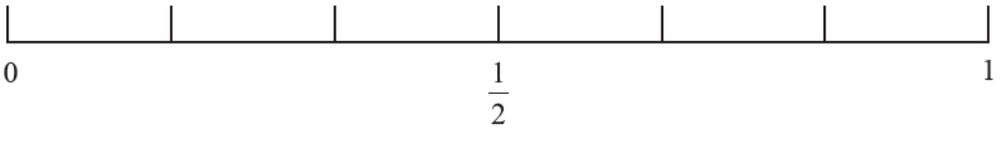
(1)

(c) On the probability scale below, mark with a cross (×) the probability that the spinner will land on a 3



(1)

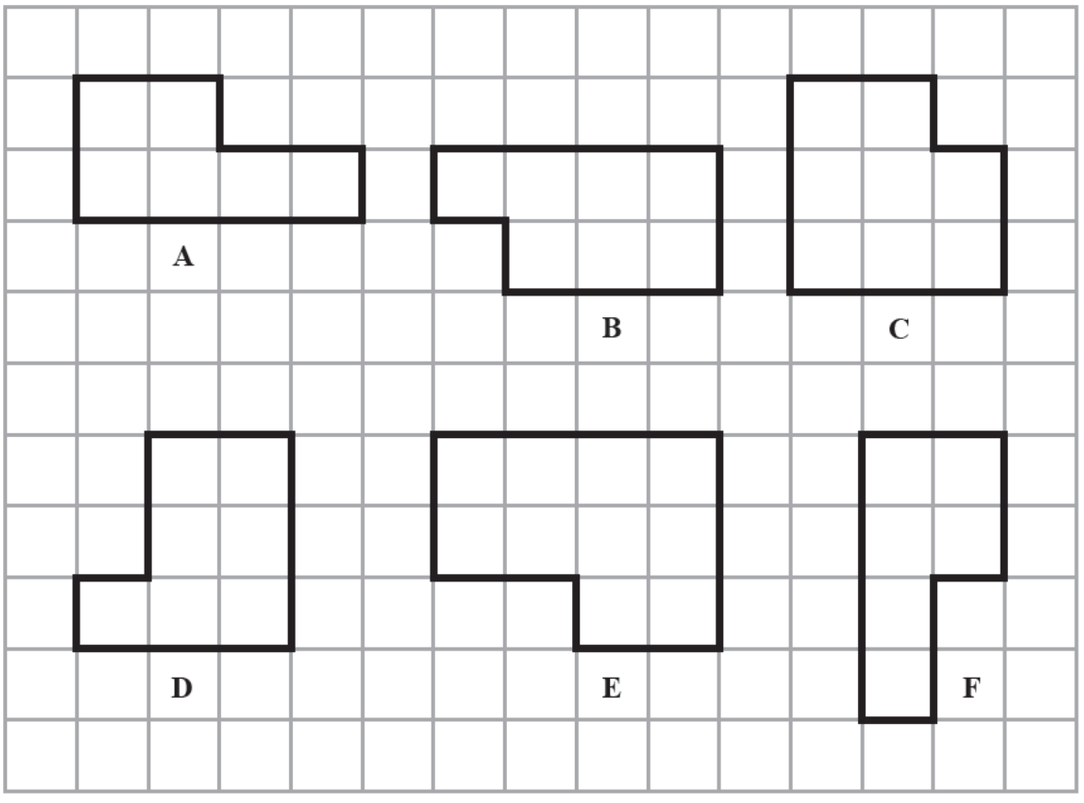
(d) On the probability scale below, mark with a cross (×) the probability that the spinner will land on a 6



(1)

(Total for Question 2 is 4 marks)

3 Here are six shapes on a centimetre grid.



(a) Find the area of shape **E**.

cm^2

(1)

(b) Find the perimeter of shape **A**.

cm

(1)

One of the shapes has exactly 1 line of symmetry.

(c) Write down the letter of this shape.

(1)

Two of the shapes are congruent.

(d) Write down the letters of these shapes.

and

(1)

(Total for Question 3 is 4 marks)

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

0.513 0.503 0.051 0.0053 0.0531

(1)

(b) Write $\frac{6}{100}$ as a decimal.

(1)

(c) Write 83.19 correct to the nearest whole number.

(1)

(d) Write $\frac{23}{5}$ as a mixed number.

(1)

(e) Write 18 as a fraction of 60
Give your fraction in its simplest form.

(2)

(f) Work out $\frac{2}{3}$ of 564 cm.

cm

(2)

(Total for Question 4 is 8 marks)

5 Here is a sequence of patterns made from sticks.

Pattern number 1

Pattern number 2

Pattern number 3

(a) In the space below, draw Pattern number 4

(1)

(b) Complete the table.

Pattern number	1	2	3	4	5
Number of sticks	6	11	16		

(2)

(c) Find the number of sticks in Pattern number 12

(2)

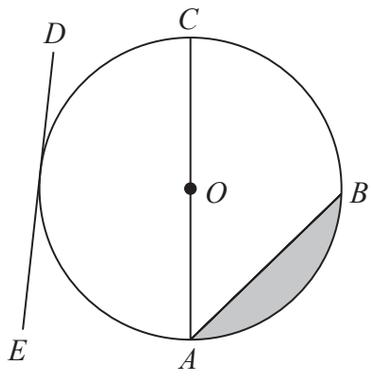
A pattern in the sequence is made from exactly 201 sticks.

(d) Find the Pattern number.

(2)

(Total for Question 5 is 7 marks)

6



A, B and C are points on a circle, centre O.
The line DE touches the circle.

Write down the mathematical name of

(i) the straight line AC,

(ii) the straight line DE,

(iii) the shaded region.

(Total for Question 6 is 3 marks)

7 (a) Simplify $4k + 2k - k$

(1)

(b) Simplify $3 \times d \times 5 \times e$

(1)

(c) Simplify $12g + 3f + 5g - 8f$

(2)

(Total for Question 7 is 4 marks)

8 Jamilla has 10 bags of sweets.
She recorded the number of sweets in each of the bags.

12 8 9 11 9 12 9 10 8 11

(a) Write down the mode.

(1)

(b) Work out the range.

(2)

(c) Find the median.

(2)

Hani also has 10 bags of sweets.
He has a mean of 9.8 sweets per bag.

(d) Who has more sweets, Jamilla or Hani?
Show your working clearly.

(2)

(Total for Question 8 is 7 marks)

9 Karin has a $20 note to spend on pens.
Each pen costs $1.58
She buys as many pens as she can.

How much change should Karin get?

$

(Total for Question 9 is 3 marks)

10 Tom arrived at a train station at 3 20 pm.

(a) Write 3 20 pm as a time using the 24-hour clock.

(1)

Tom's train left the station at 3 35 pm.
His train journey lasted 1 hour 40 minutes.

(b) At what time did Tom's train journey end?

(2)

Jerry drove 315 kilometres from London to Leeds.
His average speed was 75 km/h.

(c) Work out how long it took Jerry to drive from London to Leeds.
Give your answer in hours and minutes.

hours minutes

(3)

(Total for Question 10 is 6 marks)

11 (a) Find the value of $\sqrt{86.49}$

(1)

(b) Find the value of 1.5^3

(1)

(c) (i) Work out the value of $\dfrac{6.1^2}{9} - 2.35$

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

(2)

(ii) Write your answer to part (c) (i) correct to 1 decimal place.

(1)

(Total for Question 11 is 5 marks)

12 Point A has coordinates $(4, -1)$
Point B has coordinates $(9, 7)$

Work out the coordinates of the midpoint of the line AB.

(,)

(Total for Question 12 is 2 marks)

13 *BAD* and *BDC* are two isosceles triangles.

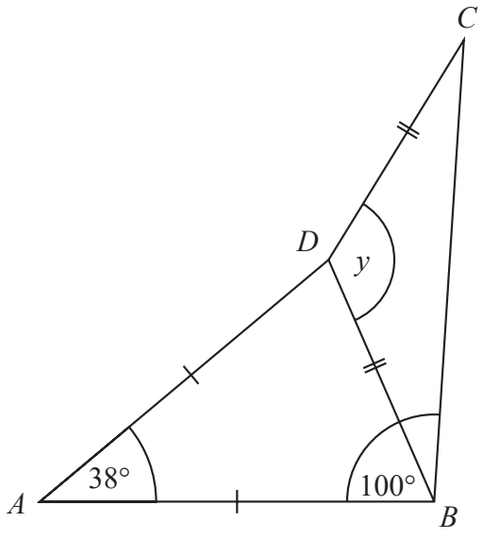


Diagram **NOT** accurately drawn

$AD = AB$
$DB = DC$

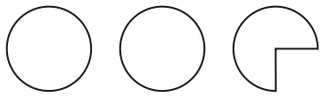
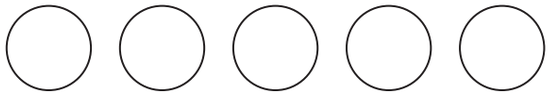
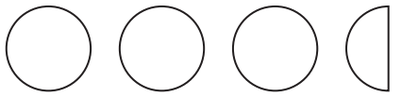
Angle $BAD = 38°$
Angle $ABC = 100°$

Work out the size of angle y.

°

(Total for Question 13 is 4 marks)

14 The pictogram shows some information about the number of footballs sold from a shop in each of 3 weeks.

week 1	
week 2	
week 3	

40 footballs were sold in week 2

Work out the total number of footballs sold from the shop in these 3 weeks.

(Total for Question 14 is 4 marks)

15 $\mathscr{E}$ = {whole numbers from 3 to 18}
A = {3, 6, 9, 18}
B = {3, 6, 9, 12, 15}
C = {6, 12, 18}

(a) Complete the following sentence.

All the numbers in set A are ____ of 18

(1)

(b) List the members of the set

(i) $A \cap B$

(ii) $A \cup C$

(2)

Sasha writes down

$12 \notin A$

(c) Is Sasha correct?

Give a reason for your answer.

(1)

(Total for Question 15 is 4 marks)

16 A circle has diameter 18 cm.

Work out the circumference of the circle.
Give your answer correct to 1 decimal place.

cm

(Total for Question 16 is 2 marks)

17 Josh has 40 counters in a bag.

In the bag, there are

18 red counters
13 blue counters
9 yellow counters

Josh puts some more **red** counters into the bag.

Josh is now going to take at random a counter from the bag.

The probability that he will take a red counter is $\frac{1}{2}$

Work out the probability that he will take a yellow counter.

(Total for Question 17 is 3 marks)

18 (a) Factorise $y^2 + y$

(1)

(b) Solve $3(m + 7) = 12 - 5m$
Show clear algebraic working.

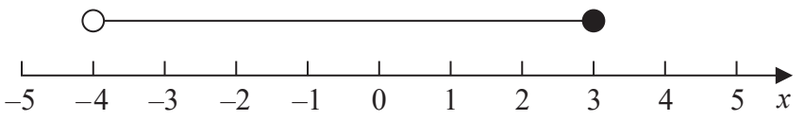
$m =$

(3)

(c) Expand and simplify $(g - 7)(g + 2)$

(2)

(d) Write down the inequality shown on this number line.



(2)

(Total for Question 18 is 8 marks)

19 There are 96 cards on a table.
Each card is either red or black.

The ratio of the number of red cards to the number of black cards is 5 : 7

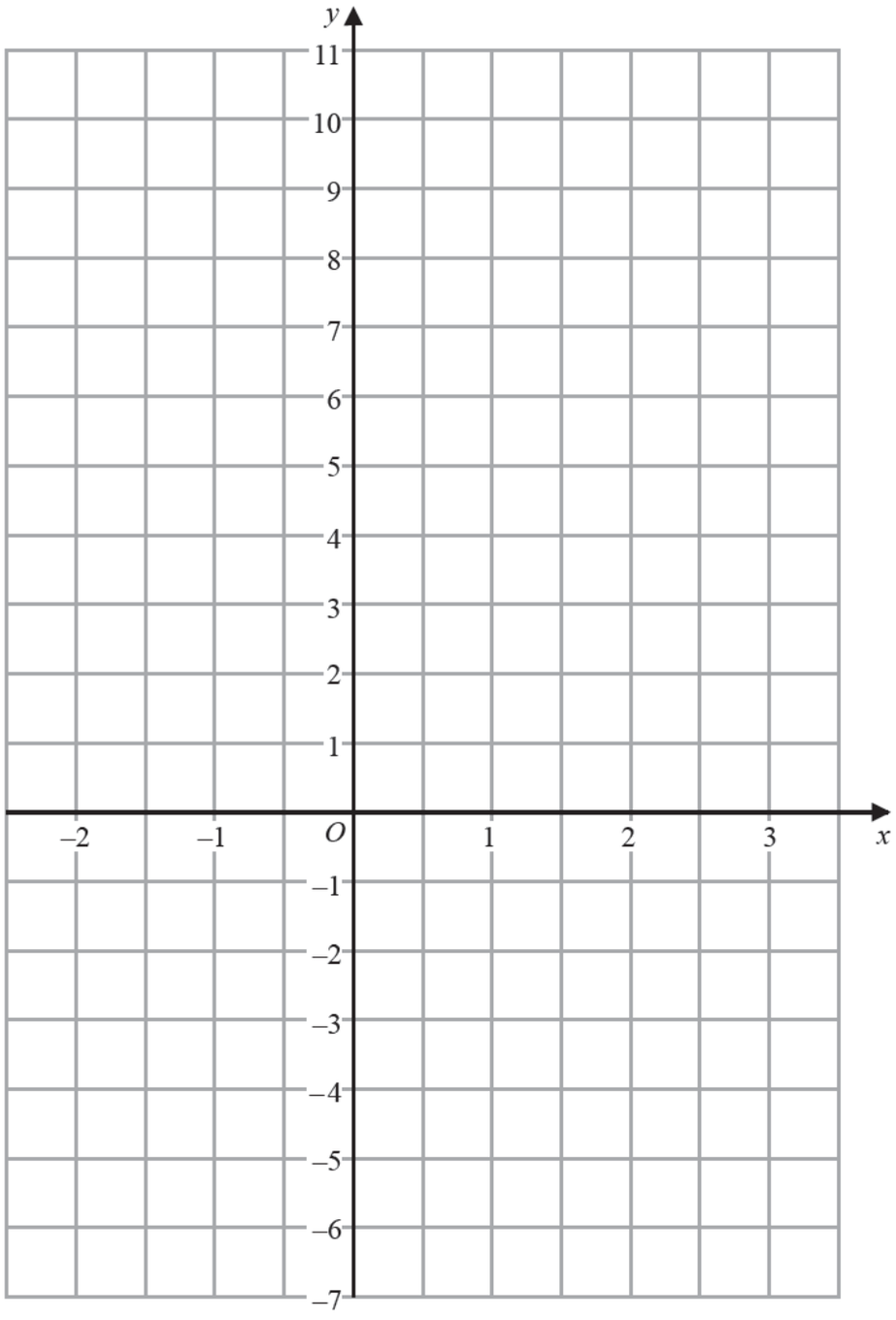
There is a circle on 35% of the red cards.

There is a circle on $\frac{3}{14}$ of the black cards.

On how many of the 96 cards is there a circle?

(Total for Question 19 is 5 marks)

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



(Total for Question 20 is 3 marks)

21

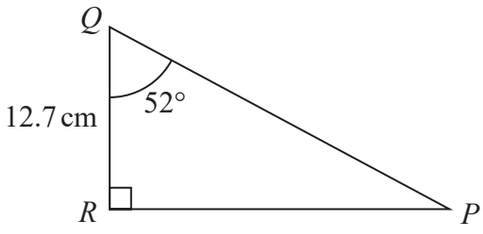


Diagram **NOT** accurately drawn

Work out the length of *RP*.
Give your answer correct to 3 significant figures.

cm

(Total for Question 21 is 3 marks)

22 Emily made 6 cakes.
It cost her a total of £7.60 to make the cakes.

Emily sold 2 of the cakes for £3.50 each.
She sold the other 4 cakes for £4.25 each.

Work out Emily's percentage profit.
Give your percentage correct to the nearest whole number.

%

(Total for Question 22 is 4 marks)

23 Here is a solid prism.

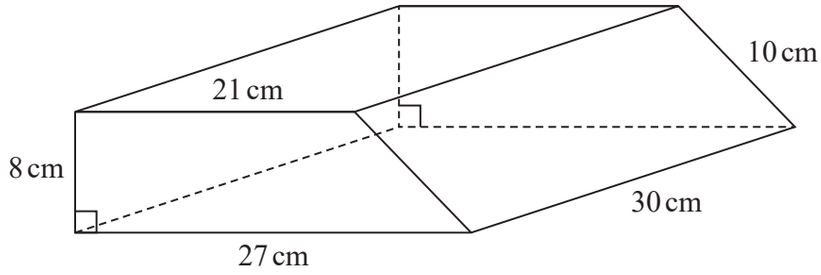


Diagram **NOT** accurately drawn

The cross section of the prism is a trapezium.

Work out the total surface area of the prism.

cm^2

(Total for Question 23 is 3 marks)

TOTAL FOR PAPER IS 100 MARKS