Candidate surname | Other names

Pearson Edexcel
Level 1/Level 2 GCSE (9–1)

Centre Number | Candidate Number

Tuesday 11 June 2019

Morning (Time: 1 hour 30 minutes) | Paper Reference **1MA1/3F**

Mathematics Shadow Set B

Paper 3 (Calculator)

Foundation Tier

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of 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.
- Answer the questions in the spaces provided
  – *there may be more space than you need*.
- You must **show all your working**.
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- **Calculators may be used.**
- If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.

Information

- The total mark for this paper is 80
- 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.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over

Pearson

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write 719 to the nearest hundred.

....

(Total for Question 1 is 1 mark)

2 Write down a multiple of 8 that is between 41 and 60

....

(Total for Question 2 is 1 mark)

3 Change 2.41 kilometres to metres.

.... metres

(Total for Question 3 is 1 mark)

4 Here is a list of numbers.

       1   4   8   12   16   27   32   64

From the list, write down all the numbers that are powers of 4

....

(Total for Question 4 is 1 mark)

5 Write 48% as a fraction.

....

(Total for Question 5 is 1 mark)

6 Work out 40% of 240

....

(Total for Question 6 is 2 marks)

7 There are four types of counter in a bag.
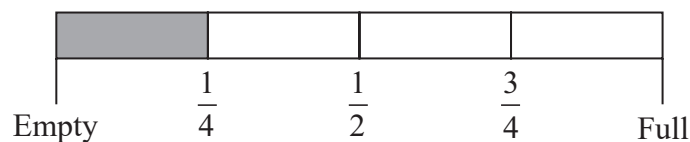
The table shows the number of each type of counter in the bag.

Type of counter	red circle	green circle	red square	green square
Number of counters	43	67	23	71

There are more green counters than red counters.
How many more?

....

(Total for Question 7 is 2 marks)

8 Here is the gauge for the fuel tank of a car.

The fuel tank holds 84 litres of fuel when the tank is full.

The tank is $\frac{1}{4}$ full of fuel.

Work out how many more litres of fuel are needed to fill the tank.

.... litres

(Total for Question 8 is 3 marks)

9 Simplify $16d + 7e - 9d + e$

....

(Total for Question 9 is 2 marks)

10 Bill has 600 counters in a bag.

He gives
        82 of the counters to Sameena
        58 of the counters to Henry
        95 of the counters to Lucas

What fraction of the 600 counters is left in Bill's
bag? Give your fraction in its simplest form.

....

(Total for Question 10 is 3 marks)

11 The table shows the costs of sending a parcel by the Express service and by the Rapid service.

Type of service	Cost
Express	£19.45
Rapid	£37.38

Brendan has to send 8 parcels.
It will be cheaper to send the parcels by the Express service than by the Rapid service.

(a How much cheaper?

£...

(3)

Luke wants to send 26 parcels by the Express service.

He does the calculation $25 \times £20 = £500$ to estimate the cost.

(b) Explain why Luke's calculation shows the actual cost will be less than £500.

....

....

....

(1)

(Total for Question 11 is 4 marks)

12 Ali, Ben and Cathy share an amount of money in the ratio 9 : 21 : 14

What fraction of the money does Ben get?

....

(Total for Question 12 is 2 marks)

13 The first term of a sequence of numbers is 31
The term-to-term rule of this sequence is 'add 7'

Josie says,
        "No number in this sequence is in the 5 times table."

(a) Give an example to show that Josie is wrong.

....

(1)

(b) Is 66 a number in this sequence?
    Give a reason for your answer.

....

....

(1)

(Total for Question 13 is 2 marks)

14 Find the value of $\dfrac{201.53 + 9.73}{18.71 - 5.19}$

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

....

(Total for Question 14 is 2 marks)

15 You can use this rule to work out the total hire charge, in pounds (£), for hiring a 3D printer for a number of days.

Total hire charge (£) = number of days × 8.55 + 52

Mia wants to hire a 3D printer for 7 weeks.

(a Work out the total hire charge.

£...
(2)

Zahir hires a 3D printer.
The total hire charge is £223.00

(b For how many days does Zahir hire the 3D printer?

.... days
(2)

(Total for Question 15 is 4 marks)

16 Here is a rectangle.

7 cm

10 cm   10 cm

7 cm
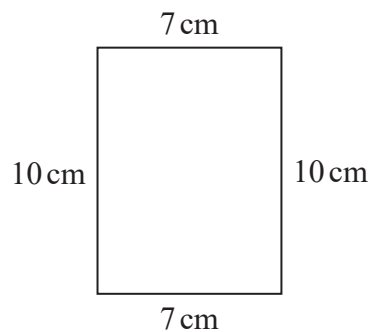
The 8-sided shape below is made from four of these rectangles.
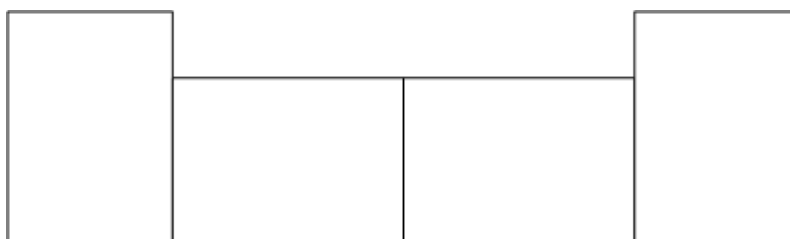
Work out the perimeter of this 8-sided shape.

.... cm
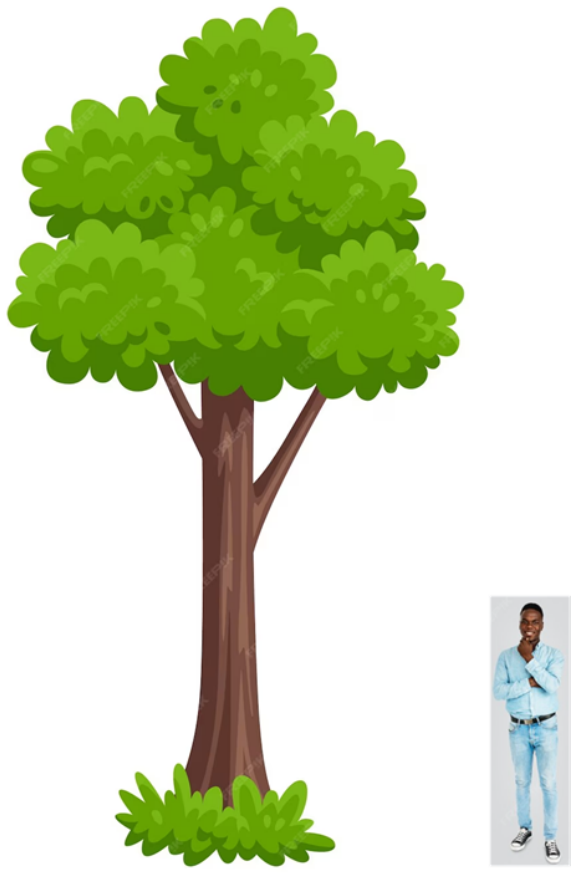
(Total for Question 16 is 3 marks)

17 The accurate scale diagram shows a tree and a man.

The man has a height of 1.9 metres.

Find an estimate for the real height, in metres, of the tree.

.... metres

(Total for Question 17 is 2 marks)

Turn over ▶

P 5 5 6 0 6 A 0 9 2 4

18 The table shows information about the numbers of points scored by 30 students in a quiz.

Number of points	Frequency
0	4
1	8
2	5
3	7
4	4
5	2

(a) Find the modal number of points.

....

(1)

(b) Work out the total number of points scored.

....

(2)

(Total for Question 18 is 3 marks)

19 Make x the subject of the formula $y = 9x - 3$

....

(Total for Question 19 is 2 marks)

20 The diagram shows two regular shapes.
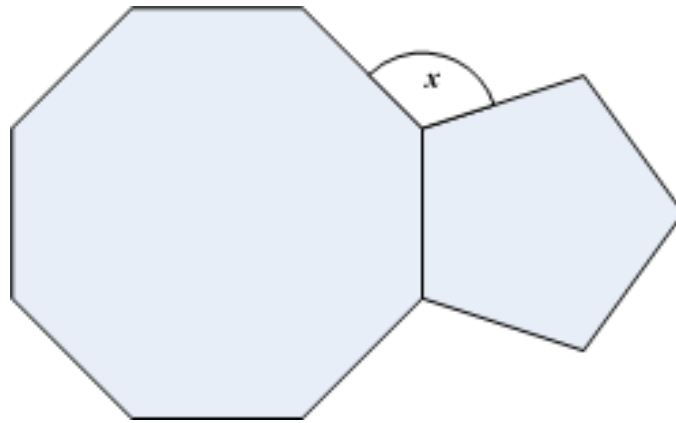
Work out the size of angle x.

.... °

(Total for Question 20 is 2 marks)

21 Liz goes on holiday to South Africa.

Liz wants to change £1600 into South African rand.
She wants to get as many 200 rand notes as possible.

The exchange rate is £1 = 21.34 rand.

Work out the greatest number of 200 rand notes that Liz can get for £1600

....

(Total for Question 21 is 3 marks)

22 In October Sally drove 670 miles in her car.
The car travelled 43.5 miles for each gallon of petrol used.

Petrol cost £1.38 per litre.
1 gallon = 4.55 litres.

Work out the cost of the petrol the car used in October.

£..

(Total for Question 22 is 4 marks)

23 Costcorp sells packets of sweets to shop owners.

On Monday three shop owners buy sweets from Costcorp.
Each shop owner buys small packets, medium packets and large packets of mints.

Alan buys 250 packets of sweets.
32% are small packets.
40% are large packets.

Beryl buys 500 packets of sweets.
$\dfrac{3}{10}$ are small packets.

$\dfrac{1}{10}$ are large packets.

Charlie buys 250 small packets of sweets so that

number of small packets : number of medium packets = 5 : 6

Work out the total number of medium packets of sweets these shop owners buy.

You must show all your working.

....
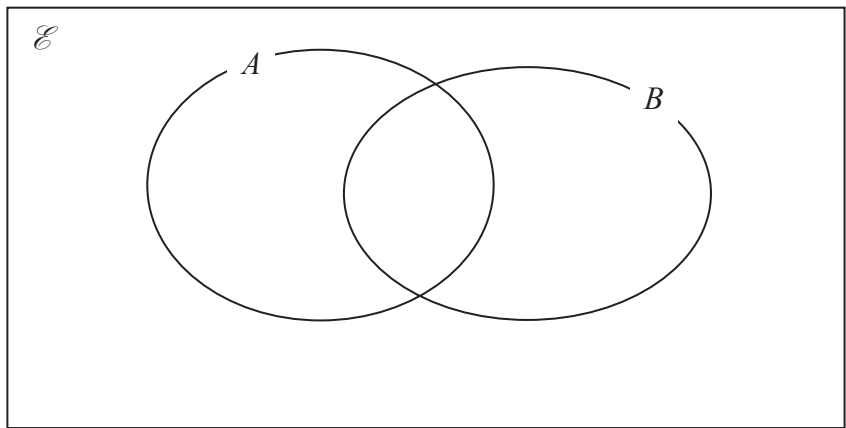
(Total for Question 23 is 5 marks)

24 $\mathscr{E} = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12\}$
   $A = \{1, 5, 6, 7, 8, 9\}$
   $B = \{2, 3, 5, 7, 11\}$

(a) Complete the Venn diagram to represent this information.

(3)

A number is chosen at random from the universal set $\mathscr{E}$.

(b) Find the probability that the number is in the set $A \cap B$

....

(2)

(Total for Question 24 is 5 marks)

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

25 Katy invests £200 000 in a savings account for 6 years.
The account pays compound interest at a rate of 4.2% per annum.

Calculate the total amount of interest Katy will get at the end of 6 years.

£...

(Total for Question 25 is 3 marks)

26 The table shows information about the heights of 70 plants.

Height (*h* cm)	Frequency
$10 < h \leqslant 20$	16
$20 < h \leqslant 30$	13
$30 < h \leqslant 40$	9
$40 < h \leqslant 50$	17
$50 < h \leqslant 60$	11
$60 < h \leqslant 70$	4

(a) Find the class interval that contains the median.

....

(1)

(b) On the grid, draw a frequency polygon for the information in the table.
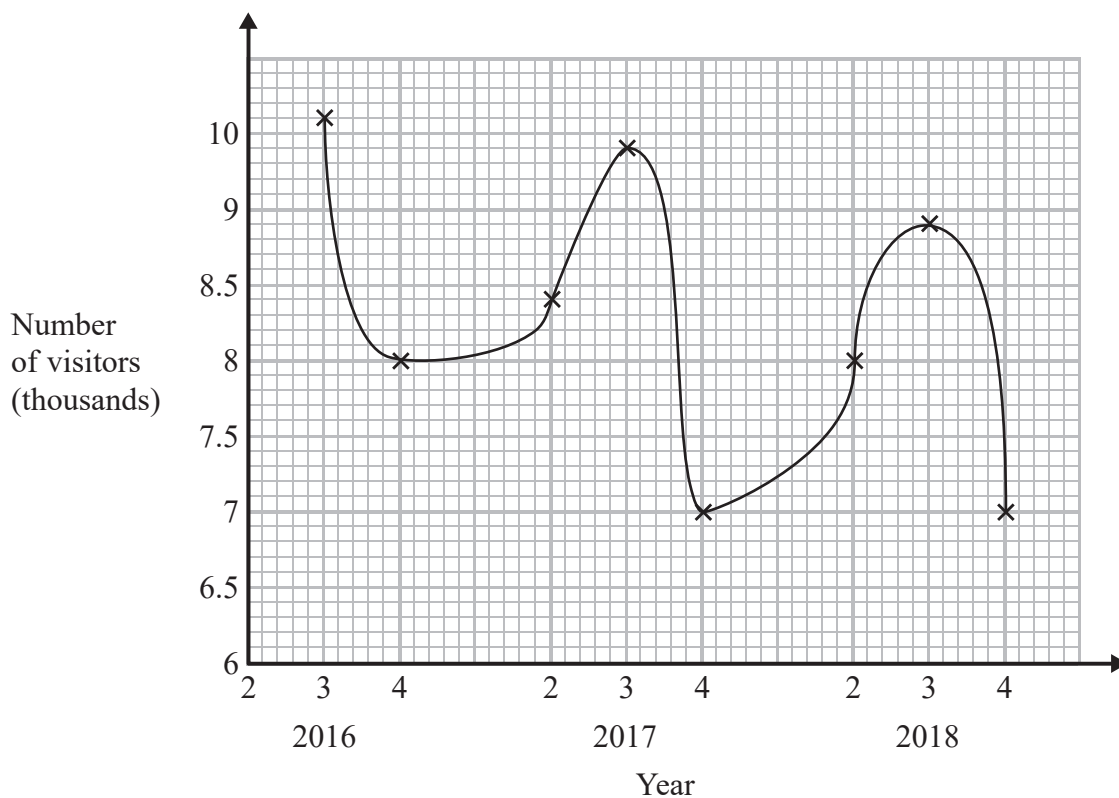

Height (*h* cm)

(2)
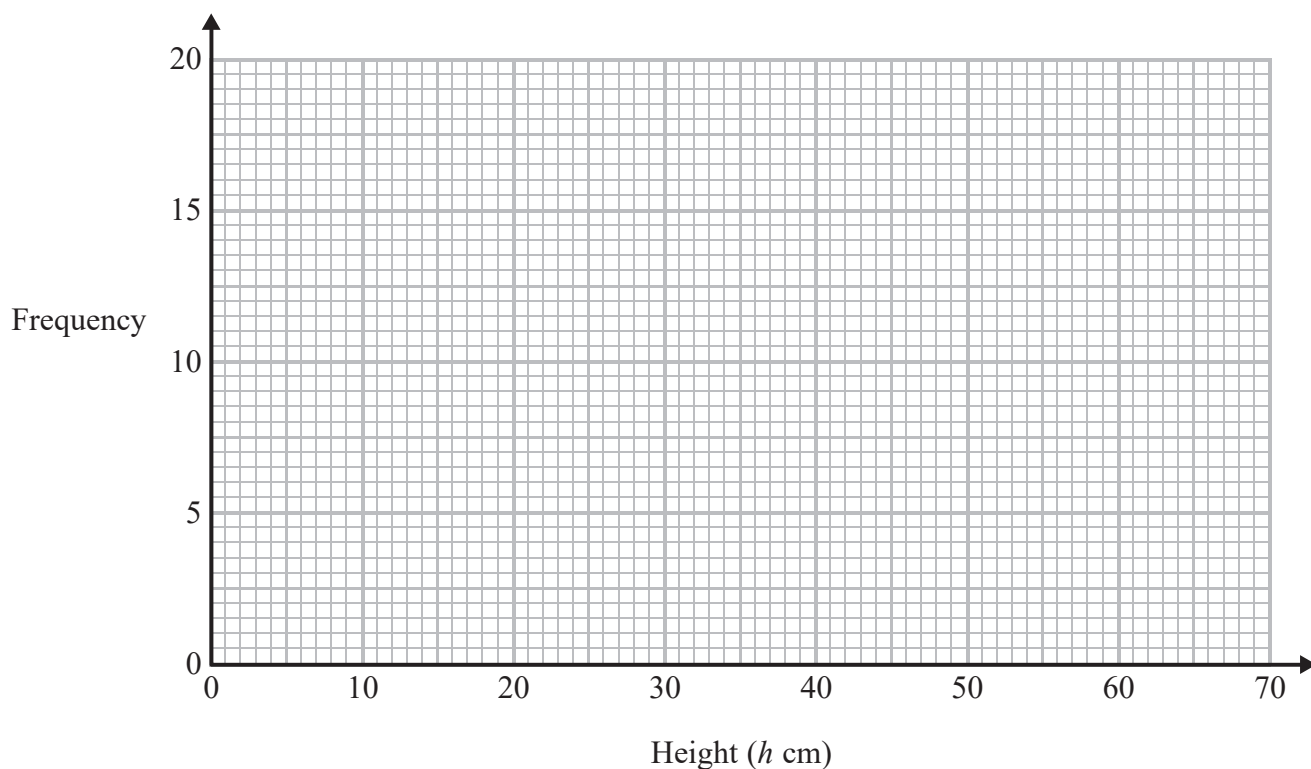
(Total for Question 26 is 3 marks)

27 Sean has drawn a time series graph to show the numbers, in thousands, of visitors to a fun park.

Write down two things that are wrong or could be misleading with this graph.

1 ....

....

....

2 ....

....

....

(Total for Question 27 is 2 marks)

28 The diagram shows a hexagon.
The hexagon has one line of symmetry.
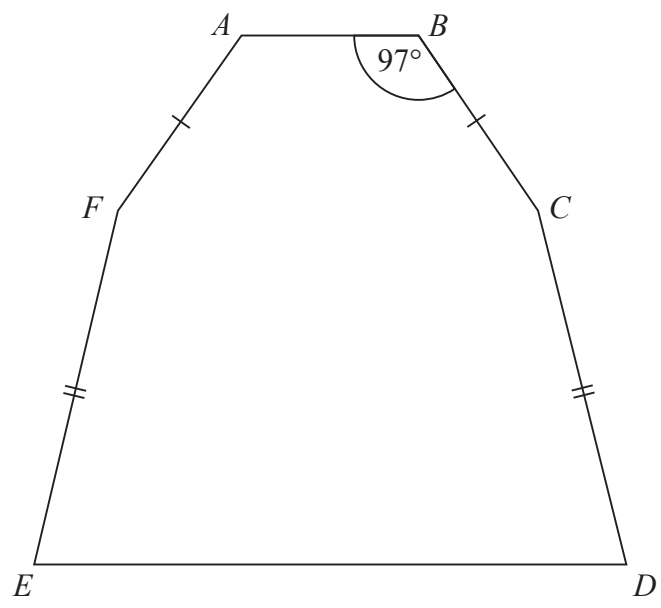
$FA = BC$
$EF = CD$
Angle $ABC = 97°$

Angle $BCD = 2 \times$ angle CDE

Work out the size of angle AFE.
You must show all your working.

.... °
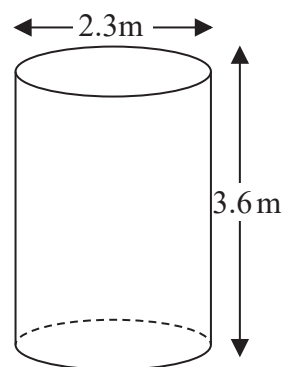
(Total for Question 28 is 4 marks)

29 Jeremy has to cover 5 tanks completely with paint.

Each tank is in the shape of a cylinder with a top and a bottom.
The tank has a diameter of 2.3 m and a height of 3.6m.

Jeremy has 13 tins of paint.
Each tin of paint covers 11 m^2

Has Jeremy got enough paint to cover completely the 5 tanks?
You must show how you get your answer.

2.3m

3.6 m

(Total for Question 29 is 5 marks)

30 Solve the simultaneous equations

$$3x - 4y = 13$$
$$4x + 2y = 32$$

x = ...

y = ...

(Total for Question 30 is 3 marks)

TOTAL FOR PAPER IS 80 MARKS

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