Write your name here

Surname	Other names

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

Centre Number | | | | | |

Candidate Number | | | | |

Mathematics

Paper 3 (Calculator)

Foundation Tier

Mock Set 2 – Spring 2017
Time: 1 hour 30 minutes

Paper Reference
1MA1/3F

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 ▶

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6/6/6/7/6/

S 5 3 6 0 6 A 0 1 2 0

Pearson

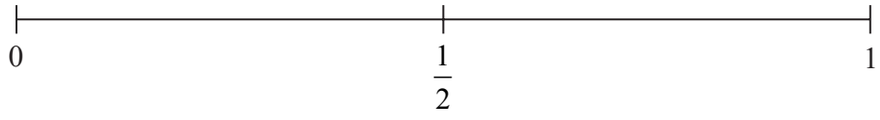
Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

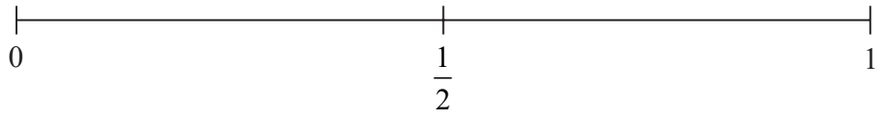
1 A fair ordinary dice is thrown.

(a) On the probability scale below, mark with a cross (×), the probability that the dice will land on an even number.



(1)

(b) On the probability scale below, mark with a cross (×), the probability that the dice will land on a 5



(1)

(Total for Question 1 is 2 marks)

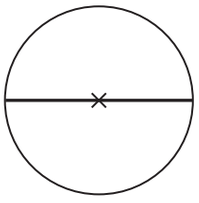
2 Write a number on the dotted line to make the statement correct.

2.75 litres = ... millilitres

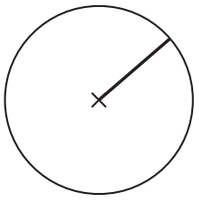
(Total for Question 2 is 1 mark)

3 Here are four circles and four straight lines.
Each circle has its centre marked with a cross (×).

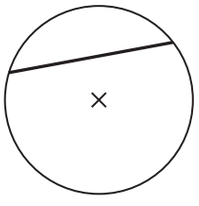
Draw an arrow from each straight line to its mathematical name.



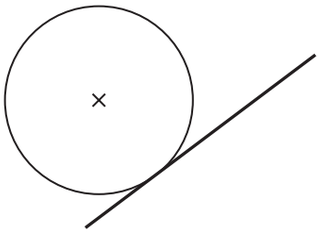
Radius



Chord



Tangent



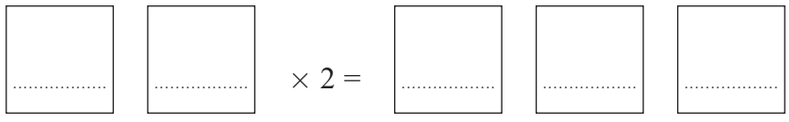
Diameter

(Total for Question 3 is 2 marks)

4 Here are five digits.

0 1 3 5 6

Use each digit once to complete this calculation.



(Total for Question 4 is 2 marks)

5 (a) Solve $2(x + 1) = 8$

$x =$ .....

(2)

(b) Solve $3y + 7 = 19$

$y =$ .....

(2)

(c) Factorise $6n - 4$

.....

(1)

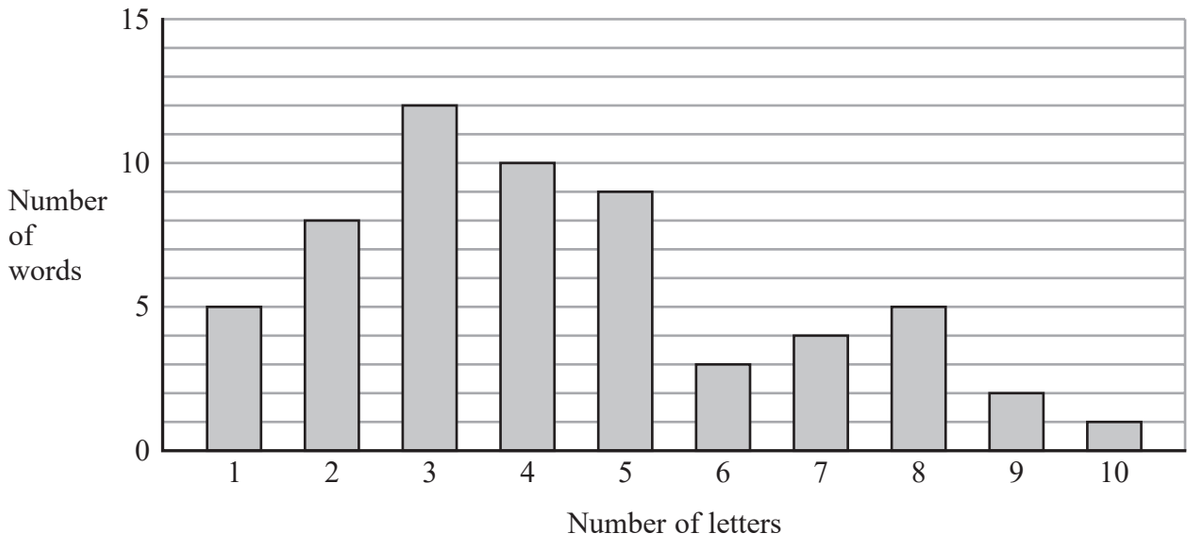
(d) Simplify $3cd + 2cd - cd$

.....

(1)

(Total for Question 5 is 6 marks)

6 The bar chart shows some information about the number of letters in each word in a paragraph.



(a) What is the modal number of letters in a word?

.....

(1)

(b) Work out the range for the numbers of letters in a word.

.....

(2)

(c) Work out the fraction of the words that have at least six letters.

.....

(3)

(Total for Question 6 is 6 marks)

7 Keri draws a triangle.
She says,

"Two of the angles of my triangle are obtuse."

Keri cannot be correct.
Explain why.

.....

.....

.....

(Total for Question 7 is 2 marks)

8 T is an integer such that $7 < T < 15$

(a) Write down the greatest number T can be.

.....

(1)

f and g are both integers.

$f + g = 500$
f is 160 greater than g

(b) Calculate the value of f and the value of g.

$f =$ .....

$g =$ .....

(3)

(Total for Question 8 is 4 marks)

9 288 chocolates are put into three boxes.

The chocolates are put into a small box, a medium box and a large box in the ratio 1 : 3 : 8

Work out the number of chocolates in each box.

small box .....

medium box .....

large box .....

(Total for Question 9 is 3 marks)

10 Ravi buys some hats to sell at a school fete.
He buys 40 hats for a total of £120

Ravi sells $\frac{3}{4}$ of these hats at £4.50 each.
He reduces the selling price of the remaining hats to £4 each.
He sells half of the remaining hats at this selling price.

Work out the profit that Ravi makes.

£.....

(Total for Question 10 is 5 marks)

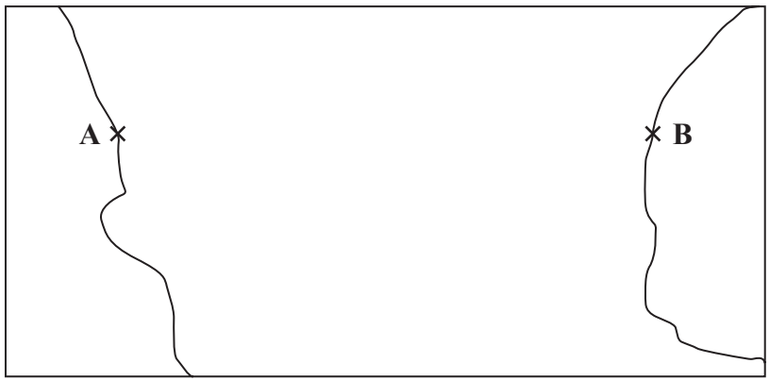
11 Here are the speeds, in kilometres per hour, of 15 cyclists.

16	22	34	18	24
22	33	28	19	41
23	25	31	40	23

Show this information in a stem and leaf diagram.

(Total for Question 11 is 3 marks)

12 This accurate scale drawing shows two ports, **A** and **B**.



Scale: 1 cm represents 10 miles.

A boat takes 5 hours to sail directly from **A** to **B**.

Calculate the boat's average speed.
You must show all your working.

..... mph

(Total for Question 12 is 3 marks)

13 Oliver wants to buy some stickers.
He only has a £10 note.

Each packet of stickers costs £1.29
Oliver buys as many packets of stickers as possible.

(a) Work out how much change Oliver should get from the £10 note.

£ .....

(3)

Jessica also wants to buy some stickers.
There are 6 stickers in each packet.
Jessica works out that she can buy exactly 28 stickers.

(b) Is Jessica correct?
Justify your answer.

.....

.....

(1)

(Total for Question 13 is 4 marks)

14 Ali invests £400 for 5 years in a savings account.
The account pays simple interest at a rate of 3.5% per year.

Work out the total amount of interest Ali gets.

£.....

(Total for Question 14 is 3 marks)

15 Norma makes bags.
She makes 17 bags an hour.
Norma works for 6 hours each day, 5 days a week.

Each bag is checked.
If the bag is perfect, it is put in a box.
When there are 12 bags in a box it is full.

One week 90% of the bags Norma made were perfect.

Work out the number of boxes completely filled with bags made by Norma.

.....

(Total for Question 15 is 5 marks)

16 Solve the simultaneous equations

$$2x + 3y = 10$$
$$4x - y = -1$$

$x =$ .....

$y =$ .....

(Total for Question 16 is 3 marks)

17 A is the point with coordinates (2, 10)
B is the point with coordinates (5, d)

The gradient of the line AB is 4

Work out the value of d.

$d =$ .....

(Total for Question 17 is 3 marks)

18 Sophia pays £222 for a plane ticket.
She also pays 100 euros airport tax.

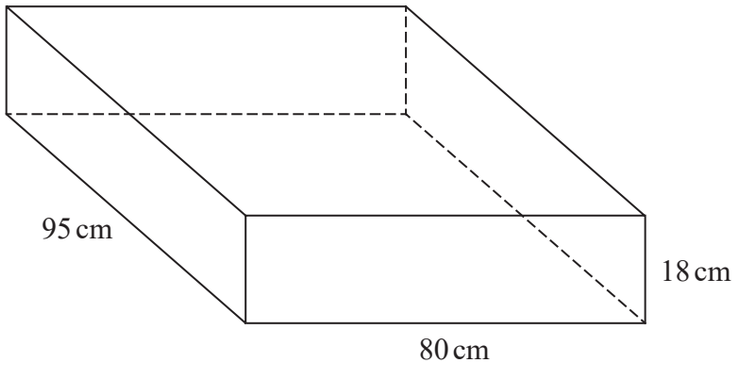
The exchange rate is £1 = 1.38 euros.

What percentage of the total cost of the ticket and the airport tax does Sophia pay for the airport tax?
Give your answer correct to 1 decimal place.

.....%

(Total for Question 18 is 3 marks)

19 A sofa has 6 identical cushions.
Each cushion is a cuboid 18 cm by 80 cm by 95 cm.



The cushions are covered with a protective spray.
The protective spray is in cans.

The label on each can has this information.

Spray in this can covers 4 m^2

(a) Work out how many cans are needed to cover the 6 cushions with protective spray.

.....

(5)

The information on each label is inaccurate.
The spray in each can covers 10% more than 4 m^2.

(b) How will this affect the number of cans needed for the 6 cushions?
You must show how you get your answer.

.....

.....

(2)

(Total for Question 19 is 7 marks)

20 $\mathbf{a} = \begin{pmatrix} 1 \\ 4 \end{pmatrix}$ and $\mathbf{b} = \begin{pmatrix} 3 \\ 2 \end{pmatrix}$

(a) Write down as a column vector

(i) $\mathbf{a} + \mathbf{b}$

.....

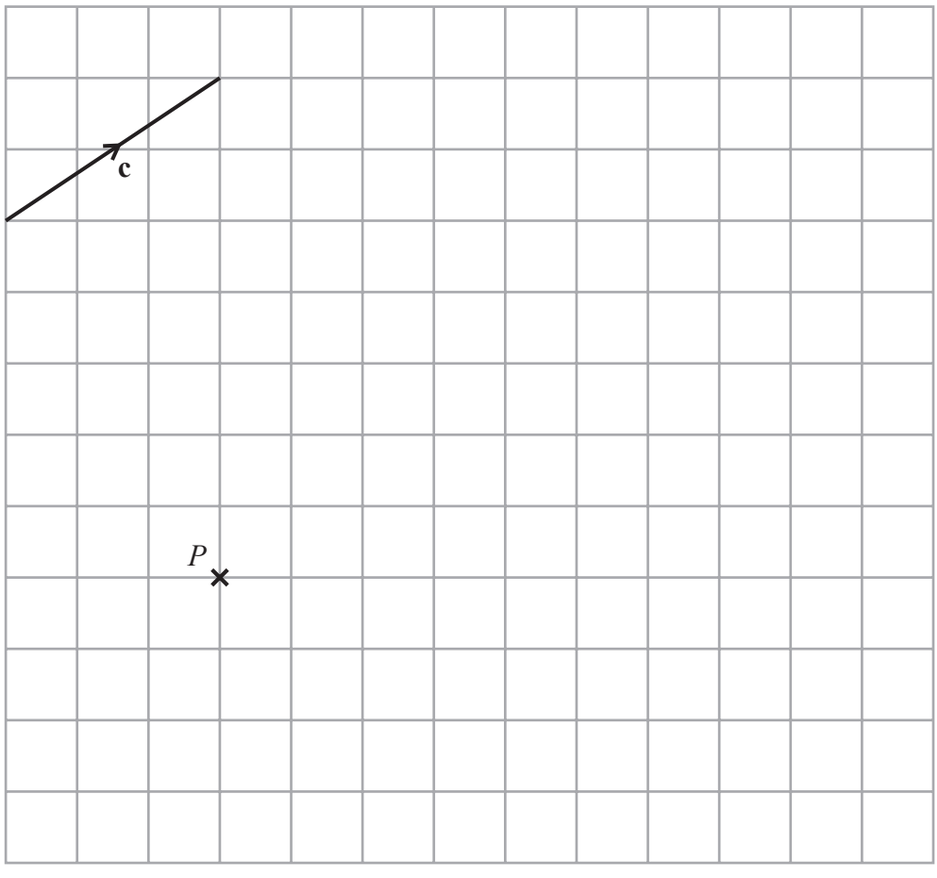
(1)

(ii) $2\mathbf{a} + 3\mathbf{b}$

.....

(2)

The vector **c** is drawn on the grid.



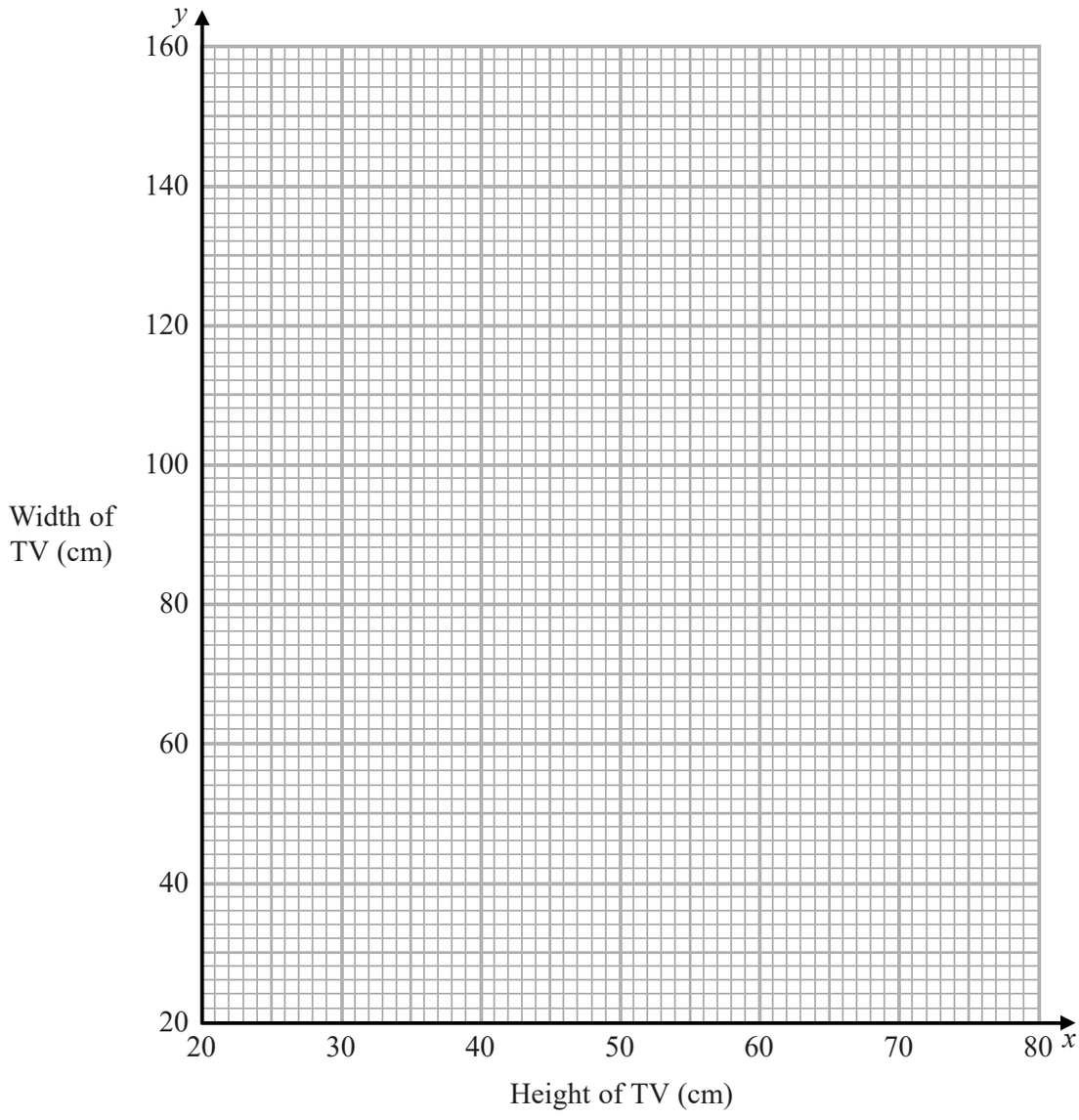
(b) From the point P, draw the vector $3\mathbf{c}$

(1)

(Total for Question 20 is 4 marks)

21 The height (x cm) and the width (y cm) of TVs are in the ratio 9 : 16

(a) Use this information to draw a graph to show the relationship between the height and the width of TVs.
Use values of x from 20 to 80



(2)

A TV has a width of 90 cm.

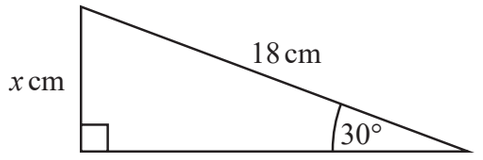
(b) Use your graph to work out the height of this TV.

..... cm

(1)

(Total for Question 21 is 3 marks)

22



Work out the value of x.

.....

(Total for Question 22 is 2 marks)

23 In a sale, normal prices are reduced by 17%.
The normal price of a washing machine is reduced by £42.50

Work out the sale price of the washing machine.

£.....

(Total for Question 23 is 3 marks)

24 $p^2 \times p^n = p^6$

Find the value of n.

.....

(Total for Question 24 is 1 mark)

TOTAL FOR PAPER IS 80 MARKS