

Please check the examination details below before entering your candidate information

Candidate surname

Other names

Centre Number

Candidate Number

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

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Mock Set 4 – Autumn 2018

Time: 1 hour 30 minutes

Paper Reference **1MA1/3F**

Mathematics

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 ►

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Pearson

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write 4729 correct to the nearest hundred.



.....

(Total for Question 1 is 1 mark)

2 Write 8% as a decimal.



.....

(Total for Question 2 is 1 mark)

3 Change 2.5 litres into millilitres.



.....millilitres

(Total for Question 3 is 1 mark)

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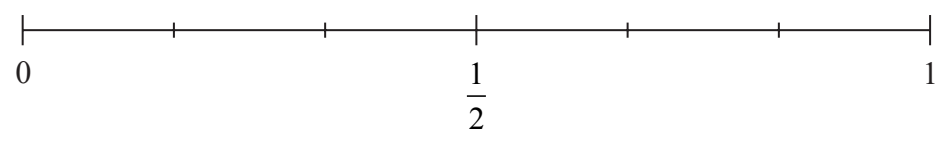
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4 Lukas has a fair ordinary dice.

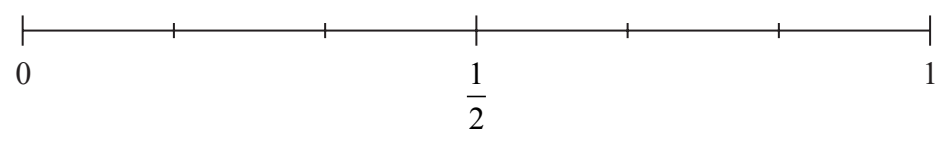
Lukas rolls the dice once.

(a) On the probability scale below, mark with a cross (×) the probability that Lukas gets an odd number.



(1)

(b) On the probability scale below, mark with a cross (×) the probability that Lukas gets the number 2



(1)

(Total for Question 4 is 2 marks)

5 A film starts at 19 30
The film lasts 104 minutes.

At what time does the film end?



(Total for Question 5 is 2 marks)



6 A team gets

3 points for each match it wins
1 point for each match it draws
and 0 points for each match it loses

Jill's team has played 40 matches.

Jill's team has drawn 16 matches.

Jill's team has got a total of 55 points.

How many matches has Jill's team lost?



.....
(Total for Question 6 is 3 marks)

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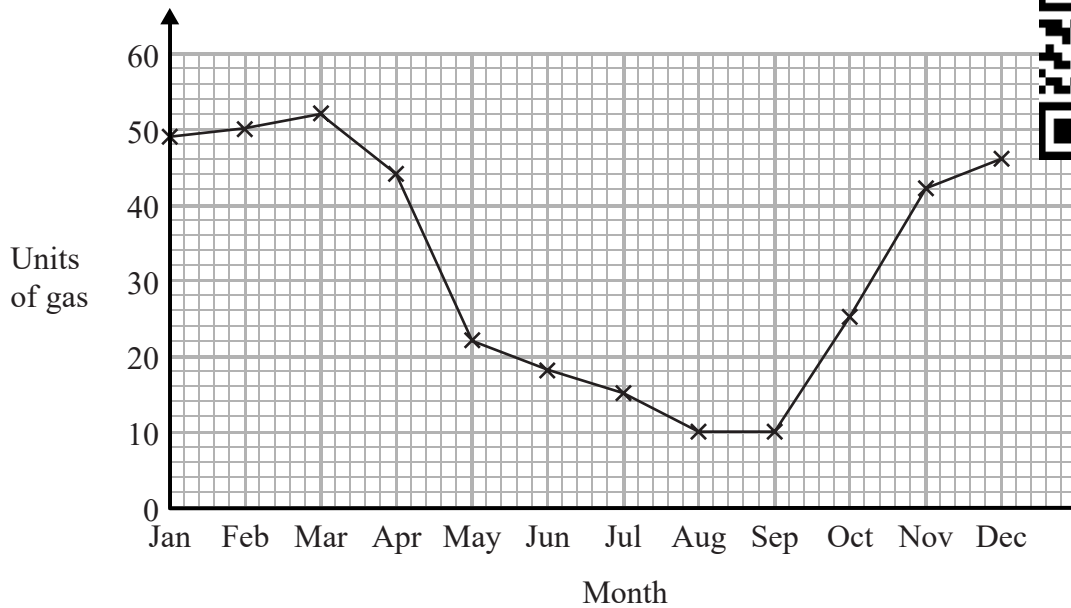
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- 7 The graph gives information about the number of units of gas Shazia used last year to heat her house.

For each month the graph shows the average number of units of gas she used each day.



In some months the average number of units of gas Shazia used each day was less than 20

- (a) In how many months?

.....
(1)

From September to December the average number of units of gas Shazia used each day increased month by month.

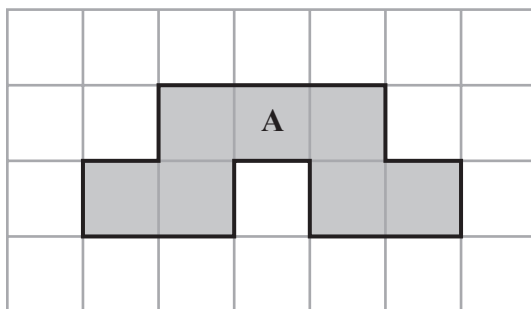
- (b) Give a reason why this might have happened.

.....
.....
(1)

(Total for Question 7 is 2 marks)



8 Shape A is shown shaded on a grid of centimetre squares.

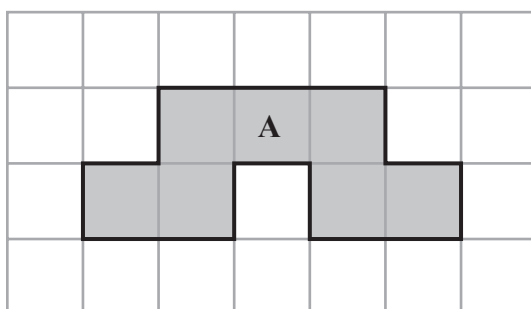


(a) Find the perimeter of shape A.

.....
(2)

Shape A is shown shaded on a grid of centimetre squares below.

(b) On the grid, shade **one** more square so that the shaded shape now has a perimeter which is **less** than the perimeter of shape A.



(1)

(Total for Question 8 is 3 marks)

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9 (a) Simplify $n + n + n + n + n$



.....
(1)

(b) Simplify $5a - 4b - a + 3b$

.....
(2)

(Total for Question 9 is 3 marks)



- 10 Use ruler and compasses to construct an equilateral triangle with sides of length 7 cm.
You must show all your construction lines.
One side of the triangle has been drawn for you.



(Total for Question 10 is 2 marks)

- 11 There are 320 students in a school.
There are 36 more boys than girls.

What fraction of the students in the school are boys?



(Total for Question 11 is 3 marks)



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12 The stem and leaf diagram gives information about the heights of 25 students.



14	5 7 7 9
15	2 2 3 5 6 8
16	0 1 4 6 7 8 8 9
17	1 2 2 6 7
18	0 3

Key:
 14 | 5 represents 145 cm

(a) Find the median height.

..... cm
(1)

Chloe says that more than 30% of the 25 students have a height greater than 170 cm.

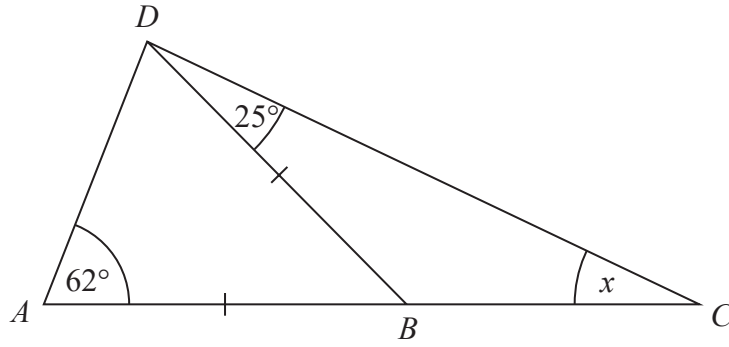
(b) Is Chloe correct?
You must show how you get your answer.

(2)

(Total for Question 12 is 3 marks)



13



In the diagram, ABC is a straight line.

Work out the size of the angle marked x .

You must give a reason for each stage of your working.



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(Total for Question 13 is 4 marks)



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14 A jar contains sugar.

The jar and the sugar have a total weight of 850 g.

Anna uses $\frac{2}{3}$ of the sugar.

The jar and the sugar now have a total weight of 530 g.

Work out the weight of the jar.



.....g

(Total for Question 14 is 3 marks)

15 A tank contains 4500 litres of water.

Water flows out of the tank at a rate of 1.2 litres per second.

How many minutes will it take for all the water to flow out of the tank?



.....minutes

(Total for Question 15 is 3 marks)



S 5 9 7 2 9 A 0 1 1 2 4

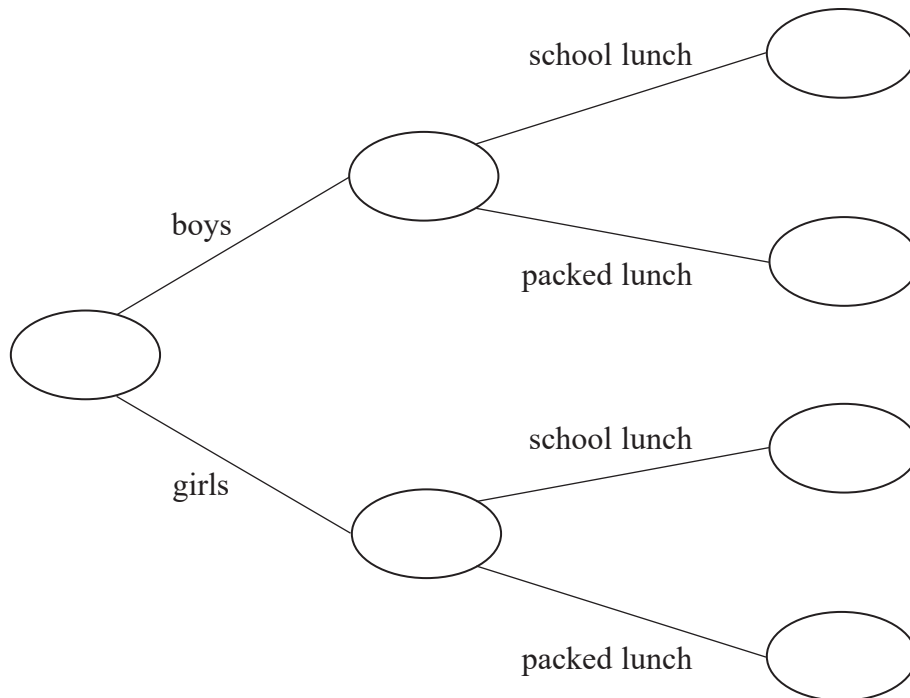
16 There are 60 children in Year 6
Each of these children has either a school lunch or a packed lunch.

32 of the children are boys.

$\frac{3}{4}$ of the boys have a school lunch.

$\frac{1}{2}$ of the girls have a packed lunch.

Use this information to complete the frequency tree.



(Total for Question 16 is 4 marks)



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17 Jamal has some counters in a bag.

36% of the counters are red
the rest of the counters are yellow

Jamal puts 50 blue counters into the bag.
Now 25% of the counters in the bag are blue.

Work out the number of yellow counters in the bag.



.....
(Total for Question 17 is 3 marks)



S 5 9 7 2 9 A 0 1 3 2 4

- 18 Last month the cost of using the air pump at a garage was 20p.
This month the cost of using the air pump is 50p.



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Tom says,

“ $50 \div 20 = 2.5$ so the cost of using the air pump has increased by 250%”

- (a) Is Tom correct?
Explain your answer.

.....
.....
.....

(1)

The normal price of a cooker is £540

Sale price
60% off normal price

Stan has to work out the sale price of the cooker.

Here is his working.

$$\begin{aligned} 10\% \text{ of } 540 &= 54 \\ 6 \times 54 &= 324 \\ \text{Sale price} &= \text{£}324 \end{aligned}$$

Stan's answer is wrong.

- (b) What mistake has Stan made?

.....
.....
.....

(1)

(Total for Question 18 is 2 marks)



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19 (a) Use your calculator to work out the value of

$$\sqrt{\frac{51.2 - 37.38}{9.67 + 84.9}}$$

Write down all the digits on your calculator display.

..... (2)

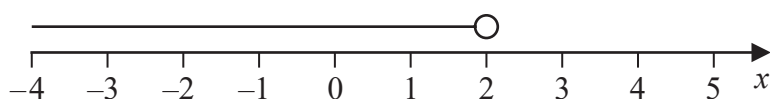
(b) Write your answer to part (a) correct to 2 significant figures.

..... (1)

(Total for Question 19 is 3 marks)



20 Write down the inequality shown in the diagram.



(Total for Question 20 is 2 marks)

21 The n th term of a sequence is $n^2 + 5$

(a) (i) Find the first two terms of this sequence.

(1)

(ii) Is 126 a term of this sequence?

You must show how you get your answer.



(1)

Here are the first five terms of an arithmetic sequence.

26 19 12 5 -2

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

(2)

(Total for Question 21 is 4 marks)



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22 The table gives information about the times that 100 people took to travel to work.

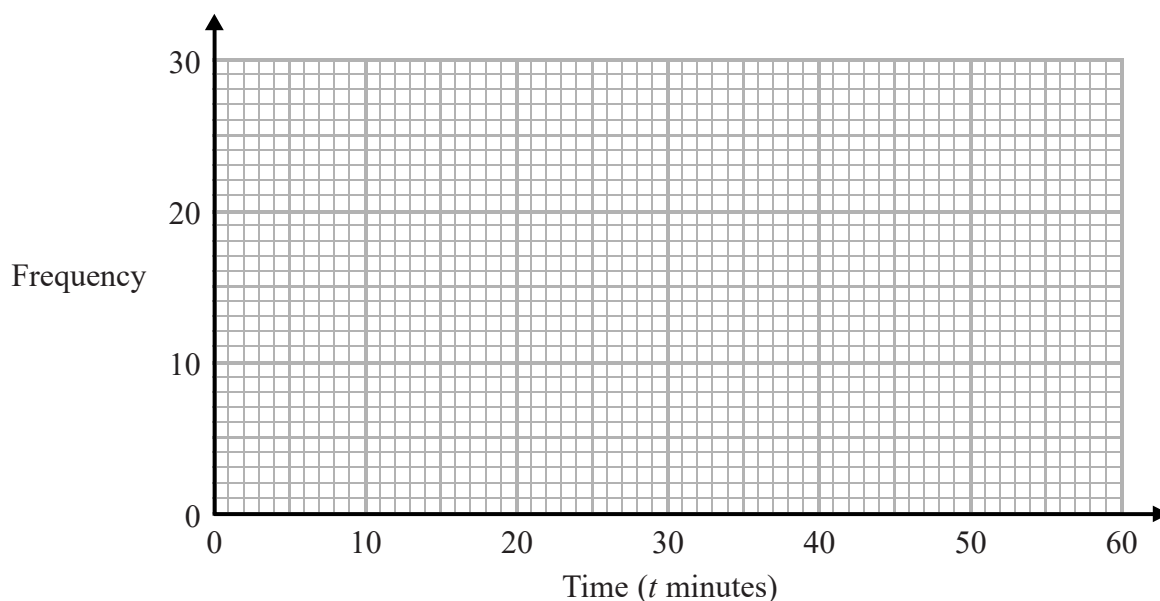


Time (t minutes)	Frequency
$0 < t \leq 10$	10
$10 < t \leq 20$	26
$20 < t \leq 30$	23
$30 < t \leq 40$	19
$40 < t \leq 50$	14
$50 < t \leq 60$	8

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

.....
(1)

(b) Draw a frequency polygon for the information in the table.



(2)

(Total for Question 22 is 3 marks)



- 23 In London, 1 pint of milk costs 58p.
In Paris, 1 litre of milk costs 1.05 euros.

1 litre = 1.76 pints
£1 = 1.17 euros

In which city is the milk better value for money, London or Paris?
You must show your working.



(Total for Question 23 is 3 marks)

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24 Simon can see two lights, light A and light B.

Light A flashes every 15 seconds.

Light B flashes every 18 seconds.

At 10 pm, both lights flash at the same time.

How many **more** times will both lights flash at the same time in the next 4 minutes?

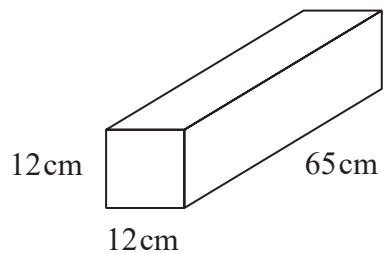


.....
(Total for Question 24 is 3 marks)



S 5 9 7 2 9 A 0 1 9 2 4

25 The diagram shows a concrete block on horizontal ground.



$$p = \frac{F}{A}$$

p = pressure
 F = force
 A = area

The block is a cuboid, 12 cm by 12 cm by 65 cm.
The block exerts a force of 220 newtons on the ground.

Calculate the pressure that the block exerts on the ground.

Give your answer in newtons/cm²



.....newtons / cm²

(Total for Question 25 is 2 marks)

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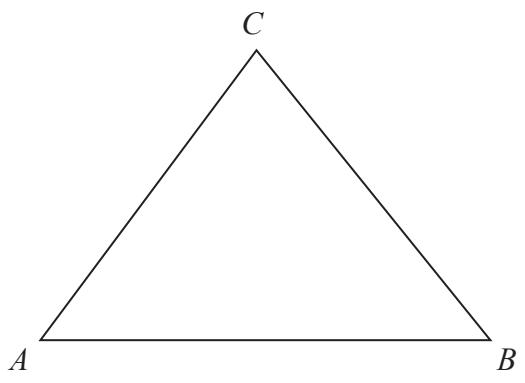


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26 The diagram shows triangle ABC .



The perimeter of the triangle is 64 cm.

$$AB : BC : CA = 6 : 5 : 5$$

Work out the area of the triangle.

.....cm²

(Total for Question 26 is 5 marks)



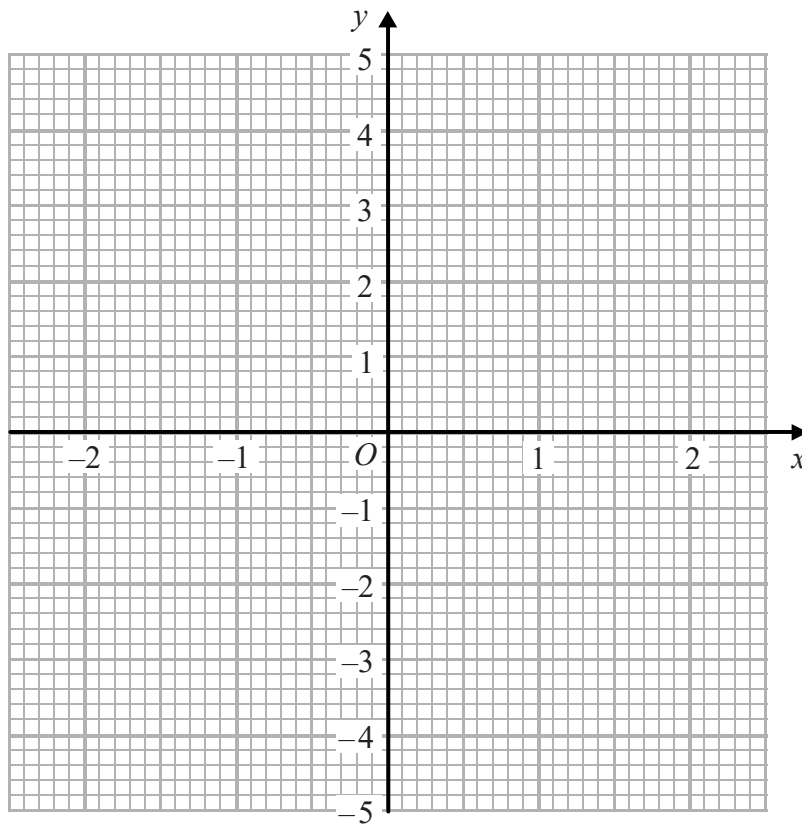
27 (a) Complete the table of values for $y = x^3 - 3x + 1$



x	-2	-1	0	1	2
y					

(2)

(b) On the grid below, draw the graph of $y = x^3 - 3x + 1$ for values of x from -2 to 2



(2)

(Total for Question 27 is 4 marks)



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28 (a) Simplify $3p^2r^4 \times 5p^4r$

.....
(2)

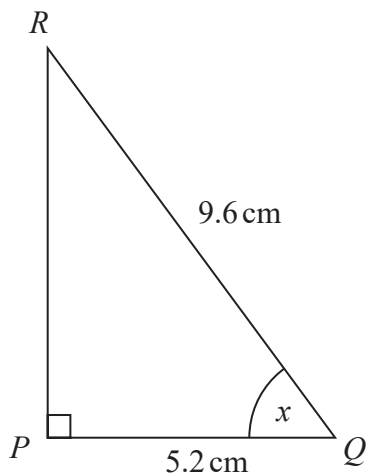
(b) Factorise fully $3xy^2 - 6x^3y$

.....
(2)

(Total for Question 28 is 4 marks)



29 PQR is a right-angled triangle.



Work out the size of the angle marked x .
Give your answer correct to 1 decimal place.

.....
(Total for Question 29 is 2 marks)

TOTAL FOR PAPER IS 80 MARKS

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