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

Specimen Papers Set 2	Paper Reference
Time: 1 hour 30 minutes	**1MA1/3F**

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, calculator.

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.*
- **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.
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- You must **show all your working out.**

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 Change 4500 g to kg.

..... kg

(Total for Question 1 is 1 mark)

2 Write 0.19 as a fraction.

.....

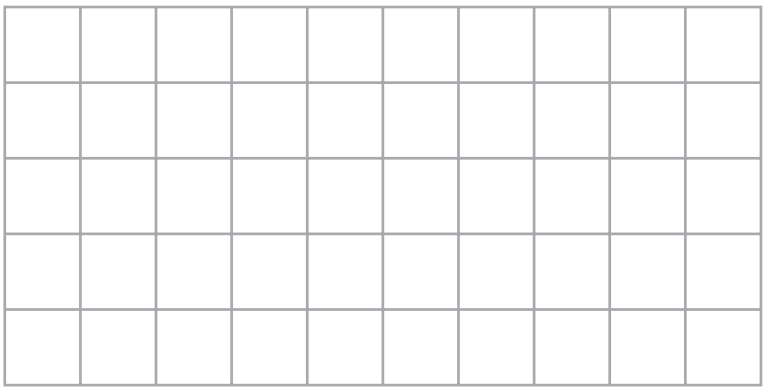
(Total for Question 2 is 1 mark)

3 Write down an even number that is a multiple of 7

.....

(Total for Question 3 is 1 mark)

4 On the grid, draw a parallelogram.



(Total for Question 4 is 1 mark)

5 Write $\frac{3}{5}$ as a percentage.

..... %

(Total for Question 5 is 1 mark)

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6 Coffee is sold in jars.
There are 200 g of coffee in each jar.

Ben makes 8 cups of coffee each day.
He thinks he uses 2 g of coffee to make each cup of coffee.

Ben wants to buy enough coffee for 28 days.

(a) How many jars of coffee does Ben need to buy?

.....

(3)

Ben finds that he uses 2.5 g of coffee to make each cup of coffee.

(b) How does this affect the number of jars of coffee he needs to buy?
You must give a reason for your answer.

.....

.....

(2)

(Total for Question 6 is 5 marks)

7 Write down three different factors of 18 that add together to give a prime number.

....

(Total for Question 7 is 2 marks)

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8 A model plane has a length of 17 cm.

The scale of the model is 1 : 200

Work out the length of the real plane.
Give your answer in metres.

..... metres

(Total for Question 8 is 2 marks)

9 (a) Find the value of $\sqrt[3]{97.336}$

.....

(1)

(b) Find the value of $\sqrt{7.29} + (2.3 - 0.85)^2$

.....

(2)

(Total for Question 9 is 3 marks)

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10 The stem and leaf diagram gives information about the speeds of 27 cars.

3	8
4	1 3 4 6 7 8 8 9 9
5	2 2 4 6 7 7 8 8 9
6	1 1 2 2 2 2 3
7	0

Key:
3 | 8 means 38 miles per hour

(a) Find the median speed.

..... miles per hour
(1)

(b) Work out the range.

..... miles per hour
(1)

One of the cars is chosen at random.

Jack says,

"The probability that the speed of this car is more than 60 miles per hour is $\frac{1}{3}$"

(c) Jack is wrong.
Explain why.

.....

.....

(2)

(Total for Question 10 is 4 marks)

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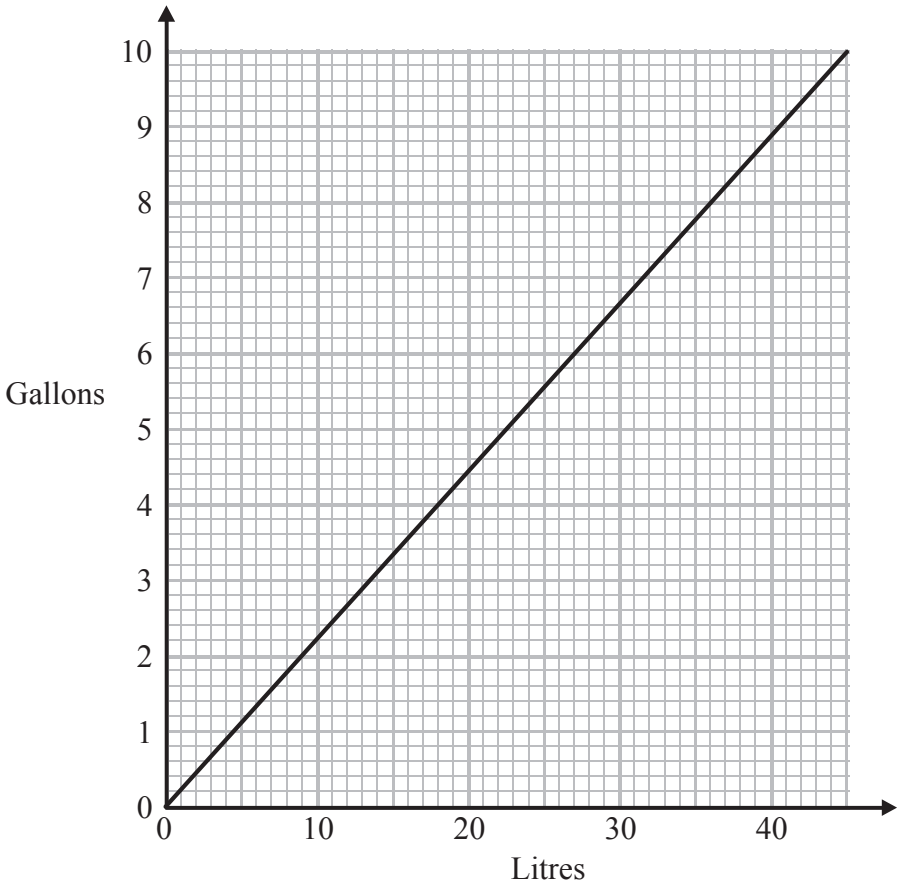
11 You can use this graph to change between litres and gallons.



Which is the greater, 60 litres or 12 gallons?
You must show how you get your answer.

.....

(Total for Question 11 is 2 marks)

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12 Ibrar buys 3 kg of apples.
He also buys 0.4 kg of mushrooms.
The total cost is £6.93

1 kg of apples cost £1.95

Work out the cost of 1 kg of mushrooms.

£ .....

(Total for Question 12 is 3 marks)

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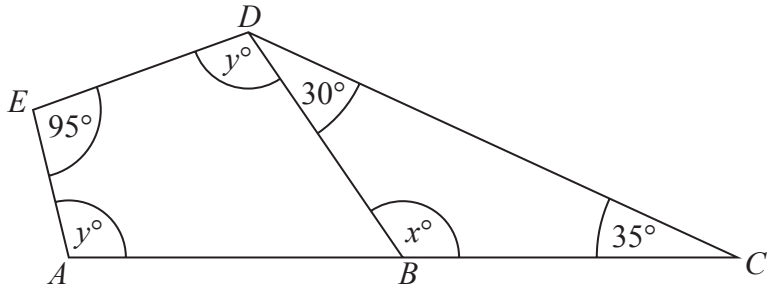
13



ABC is a straight line.
BCD is a triangle.
ABDE is a quadrilateral.

(a) (i) Work out the value of x.

.....

(ii) Give a reason for your answer.

.....

.....

(2)

(b) Work out the value of y.

.....

(2)

(Total for Question 13 is 4 marks)

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14 You can use this rule to work out the total cost, in pounds, of hiring a carpet cleaner.

Multiply the number of days by 7.8 and then add 12

Andy hires a carpet cleaner.
The total cost is £82.20

(a) Work out the number of days Andy hires the carpet cleaner for.

.....days
(2)

Chloe hires a carpet cleaner for y days.
The total cost is £T.

(b) Write down a formula for T in terms of y.

.....
(2)

(Total for Question 14 is 4 marks)

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15 There are 35 pens in a box.
15 of the pens are green.
The rest of the pens are red.

(a) What fraction of the pens in the box are red?

.....

(1)

(b) Write down the ratio of the number of green pens to the number of red pens.
Give your ratio in its simplest form.

.....

(2)

(Total for Question 15 is 3 marks)

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16 Ross rolled an ordinary dice 30 times.

The frequency table gives information about his results.

Score	Frequency
1	7
2	5
3	4
4	4
5	6
6	4

Ross worked out the mean score as 8

(a) Explain why it is impossible for the mean score to be 8

.....

.....

(1)

Graham also worked out the mean score.

Here is his working.

$1 \times 7 + 2 \times 5 + 3 \times 4 + 4 \times 4 + 5 \times 6 + 6 \times 4 = 99$

$99 \div 6 = 16.5$

The mean score is 16.5

(b) Describe the mistake Graham made in his method to work out the mean score.

.....

.....

(1)

(Total for Question 16 is 2 marks)

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17 Amelia, Hayden and Sophie did a test.
The total for the test was 75 marks.

Amelia got 56% of the 75 marks.

Hayden got $\frac{8}{15}$ of the 75 marks.

Sophie got 43 out of 75

Who got the highest mark?
You must show all your working.

(Total for Question 17 is 3 marks)

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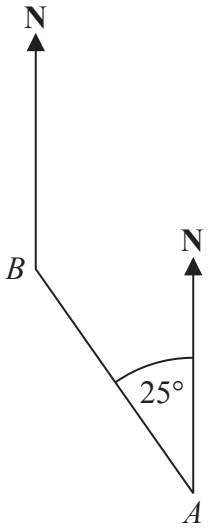
18 The diagram shows the positions of two churches, A and B.



Amber says,

"The bearing of church B from church A is 025°"

Amber is wrong.
Explain why.

.....

.....

(Total for Question 18 is 1 mark)

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19 There are only blue counters, green counters, red counters and yellow counters in a bag. George is going to take at random a counter from the bag.

The table shows each of the probabilities that George will take a blue counter or a green counter or a yellow counter.

Colour	blue	green	red	yellow
Probability	0.5	0.2		0.25

(a) Work out the probability that George will take a red counter.

.....

(1)

There are 120 counters in the bag.

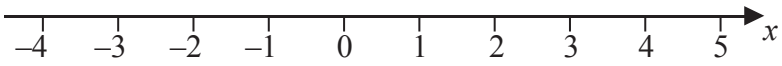
(b) Work out the number of green counters in the bag.

.....

(2)

(Total for Question 19 is 3 marks)

20 (a) Show the inequality $-2 \leqslant x < 3$ on the number line below.



(2)

(b) Solve the inequality $4y + 7 < 16$

.....

(2)

(Total for Question 20 is 4 marks)

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21 Here are the first five terms of an arithmetic sequence.

$$-3 \quad 1 \quad 5 \quad 9 \quad 13$$

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

.....

(Total for Question 21 is 2 marks)

22 The ratio of the number of boys to the number of girls in a school is 4 : 5
There are 95 girls in the school.

Work out the total number of students in the school.

.....

(Total for Question 22 is 3 marks)

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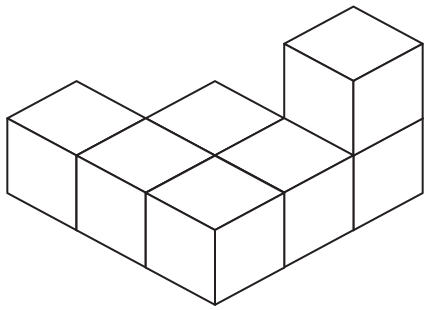
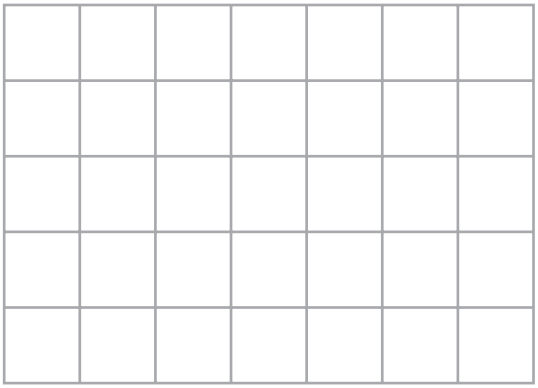
23 The diagram represents a solid made from seven centimetre cubes.



On the centimetre grid below, draw a plan of the solid.



(Total for Question 23 is 2 marks)

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24 Make t the subject of the formula $y = \frac{t}{3} - 2a$

(Total for Question 24 is 2 marks)

25 Jim rounds a number, x, to one decimal place.
The result is 7.2

Write down the error interval for x.

(Total for Question 25 is 2 marks)

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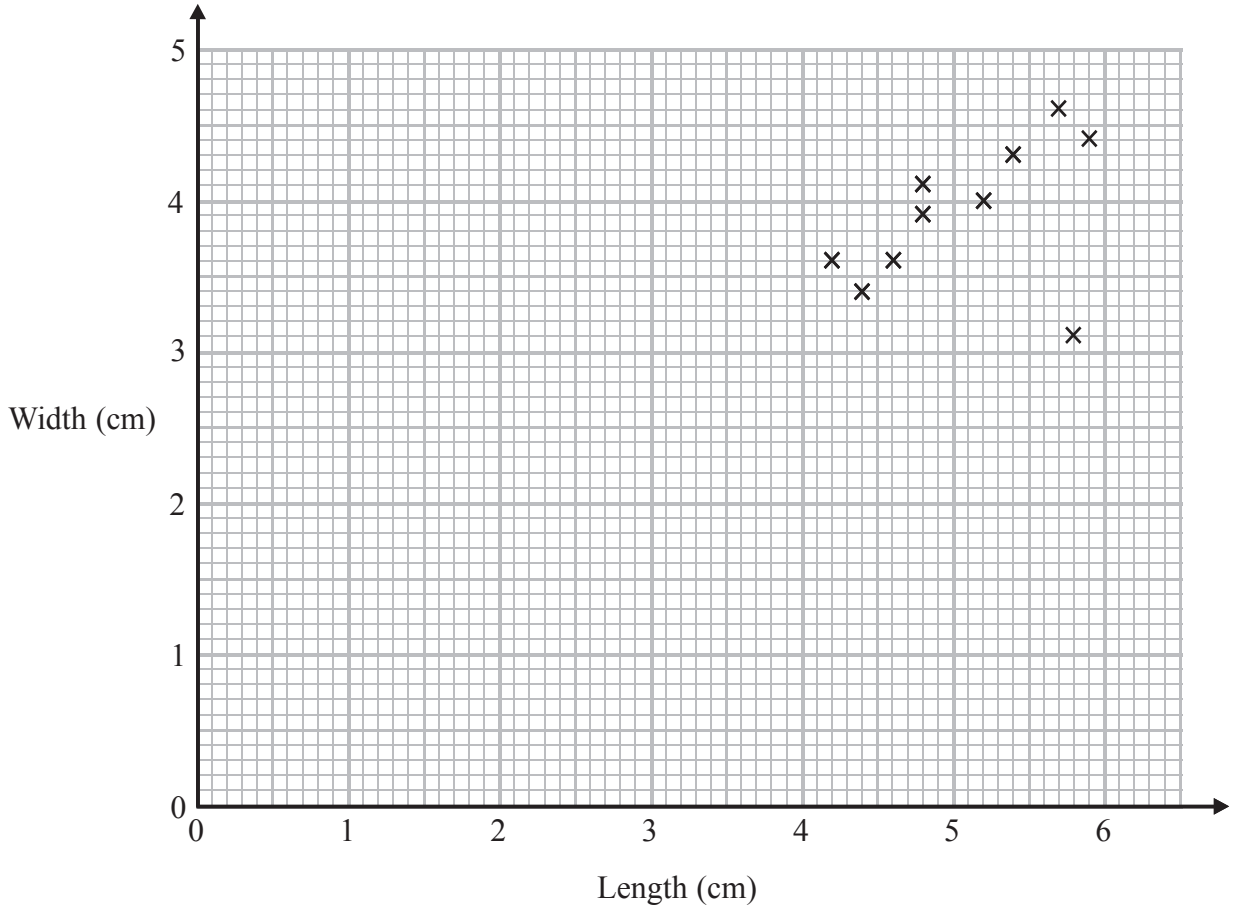
26 Katie measured the length and the width of each of 10 pine cones from the same tree.

She used her results to draw this scatter graph.



(a) Describe one improvement Katie can make to her scatter graph.

.....

.....

(1)

The point representing the results for one of the pine cones is an outlier.

(b) Explain how the results for this pine cone differ from the results for the other pine cones.

.....

.....

(1)

(Total for Question 26 is 2 marks)

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27 At a depth of x metres, the temperature of the water in an ocean is T°C.
At depths below 900 metres, T is inversely proportional to x.

T is given by

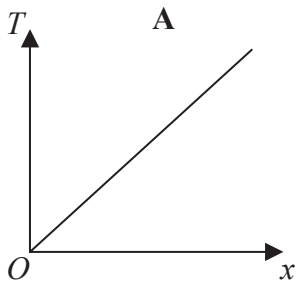
$$T = \frac{4500}{x}$$

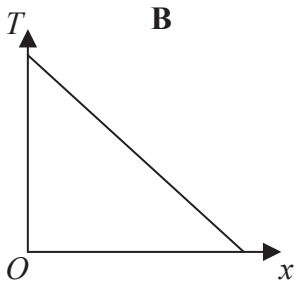
(a) Work out the difference in the temperature of the water at a depth of 1200 metres and the temperature of the water at a depth of 2500 metres.

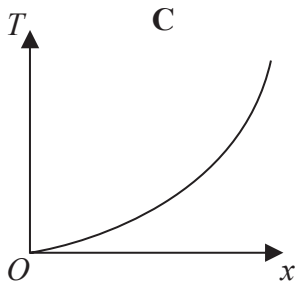
.....°C

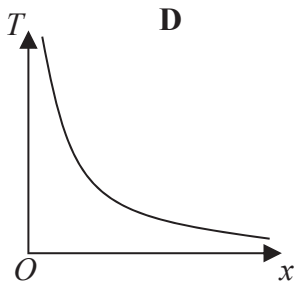
(3)

Here are four graphs.









One of the graphs could show that T is inversely proportional to x.

(b) Write down the letter of this graph.

.....

(1)

(Total for Question 27 is 4 marks)

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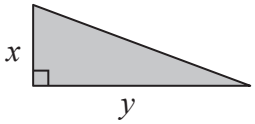
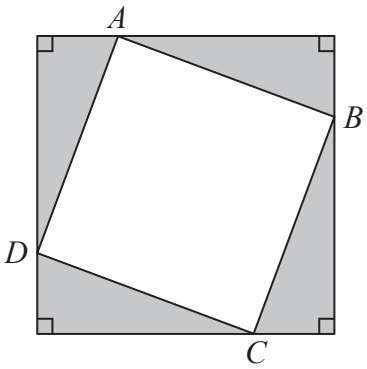
28 Here is a right-angled triangle.



Four of these triangles are joined to enclose the square *ABCD* as shown below.



Show that the area of the square *ABCD* is $x^2 + y^2$

(Total for Question 28 is 3 marks)

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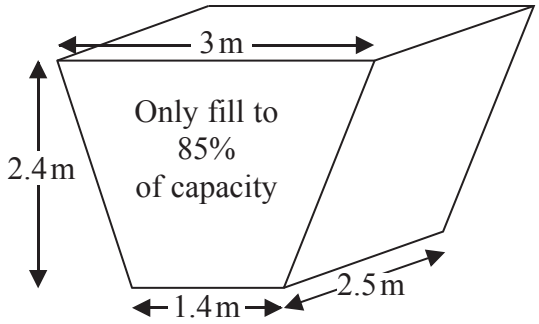
29 The diagram shows an oil tank in the shape of a prism.
The cross section of the prism is a trapezium.



The tank is empty.

Oil flows into the tank.
After one minute there are 300 litres of oil in the tank.

Assume that oil continues to flow into the tank at this rate.

(a) Work out how many **more** minutes it takes for the tank to be 85% full of oil.
($1\,m^3 = 1000$ litres)

..... minutes
(5)

The assumption about the rate of flow of the oil could be wrong.

(b) Explain how this could affect your answer to part (a).

.....

.....

(1)

(Total for Question 29 is 6 marks)

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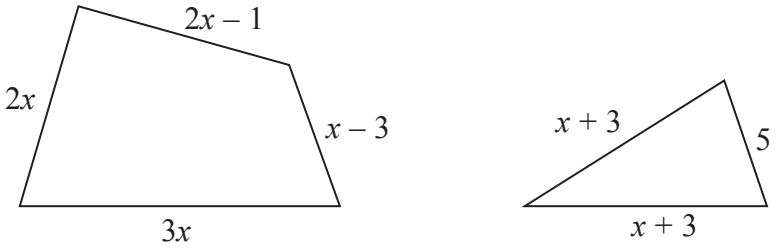
30



In the diagram all measurements are in centimetres.

The perimeter of the quadrilateral is twice the perimeter of the triangle.

Work out the perimeter of the quadrilateral.

..... cm

(Total for Question 30 is 4 marks)

TOTAL FOR PAPER IS 80 MARKS

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