

Write your name here

Surname	Other names
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Pearson
Edexcel GCSE

Centre Number

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Candidate Number

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Methods in Mathematics

Unit 1: Methods 1

For Approved Pilot Centres ONLY

Foundation Tier

Monday 10 November 2014 – Morning

Time: 1 hour 45 minutes

Paper Reference

5MM1F/01

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser. 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.*
- **Calculators must not be used.**

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.*
- Questions labelled with an **asterisk** (*) are ones where the quality of your written communication will be assessed.

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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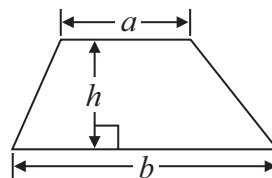
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GCSE Mathematics 2MM01

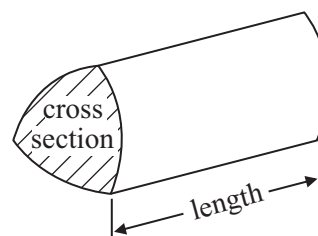
Formulae: Foundation Tier

**You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.**

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



Volume of prism = area of cross section \times length



Answer ALL questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

You must NOT use a calculator.

1 (a) Write the number 3 000 000 in words.

.....
(1)

(b) Write down the value of the 2 in 528

.....
(1)

(c) Work out the sum of one thousand and sixty and two hundred and fourteen.
Write your answer in figures.

.....
(2)

(d) Work out 30×40

.....
(1)

(e) Work out $81.4 \div 10$

.....
(1)

(Total for Question 1 is 6 marks)



- 2 There are 10 counters in a bag.
5 of the counters are red.
5 of the counters are blue.

impossible	unlikely	even	likely	certain
------------	----------	------	--------	---------

A counter is taken at random from the bag.

- (a) Which word from the box best describes the probability that the counter will be white?

.....
(1)

- (b) Which word from the box best describes the probability that the counter will be blue?

.....
(1)

(Total for Question 2 is 2 marks)

- 3 (a) Simplify $m + m + m + m$

.....
(1)

- (b) Simplify $5a - 2a$

.....
(1)

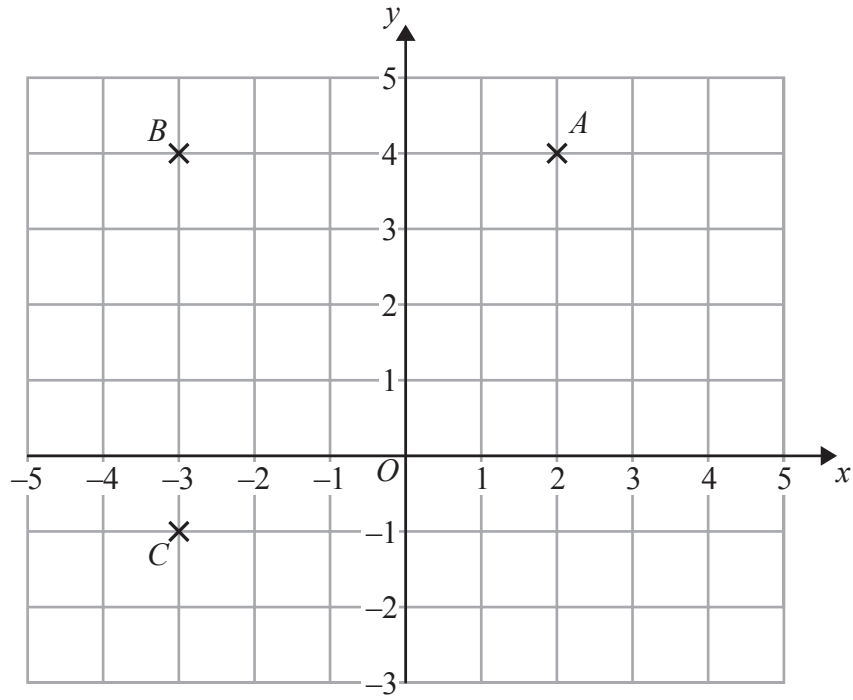
- (c) Simplify $x \times y \times 4$

.....
(1)

(Total for Question 3 is 3 marks)



4



(a) Write down the coordinates of the point

(i) A

(.....,) (1)

(ii) C

(.....,) (1)

(2)

$ABCD$ is a square.

(b) On the grid, mark with a cross (\times) the point D so that $ABCD$ is a square.

(1)

(Total for Question 4 is 3 marks)



5 (a) Write the number 456 correct to the nearest hundred.

.....
(1)

(b) Work out $500 - 152$

.....
(2)

(c) Work out $5 + 3.76 + 1.8$

.....
(2)

(d) Work out an estimate for the value of 19×10.2

.....
(2)

(e) Write the number 5.84 correct to 1 decimal place.

.....
(1)

(Total for Question 5 is 8 marks)



6 x , y and z are 3 angles.

The size of angle x is 50° .

$$\text{angle } y = \text{angle } x + 90^\circ$$

(a) What type of angle is angle y ?

.....
(1)

$$\text{angle } z = 4 \times \text{angle } x$$

(b) What type of angle is angle z ?

.....
(2)

(Total for Question 6 is 3 marks)

7

5	21	39
11	15	8
38	9	72

From the numbers in the box, write down

(a) an even number,

.....
(1)

(b) a square number,

.....
(1)

(c) a prime number.

.....
(1)

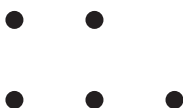
(Total for Question 7 is 3 marks)



8 Here is a sequence of patterns made from dots.



pattern number 1



pattern number 2



pattern number 3

(a) Draw pattern number 4

(1)

(b) (i) How many dots are in pattern number 9?

(ii) Explain how you found your answer.

(2)

A pattern in this sequence is made with exactly 29 dots.

(c) Which pattern number is this?

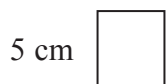
pattern number

(2)

(Total for Question 8 is 5 marks)

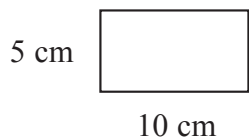


9 A square has sides of length 5 cm.



Diagrams **NOT**
accurately drawn

A rectangle is 10 cm by 5 cm.



Here is a larger rectangle made from some of these squares and some of these rectangles.

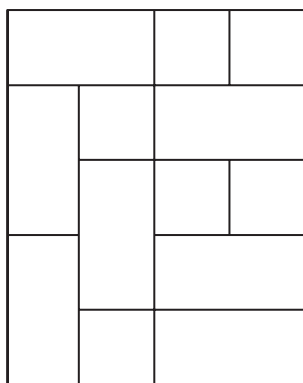


Diagram **NOT**
accurately drawn

Work out the area of this larger rectangle.

.....
(Total for Question 9 is 4 marks)



10

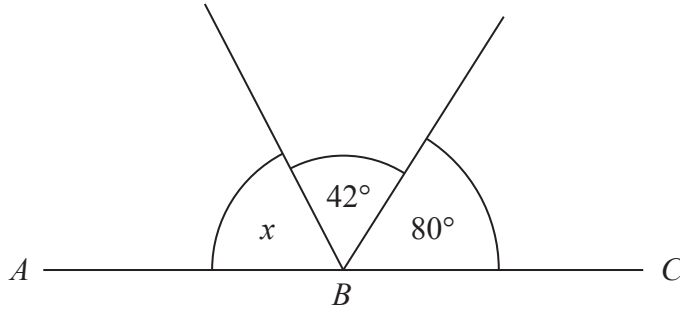


Diagram **NOT**
accurately drawn

ABC is a straight line.

(i) Work out the size of the angle marked x .

$x = \dots\dots\dots^\circ$

(ii) Give a reason for your answer.

.....

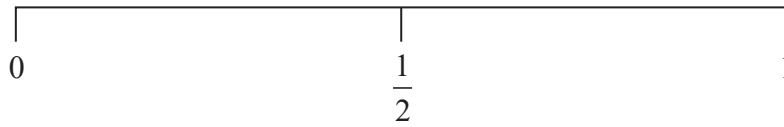
.....

(Total for Question 10 is 3 marks)



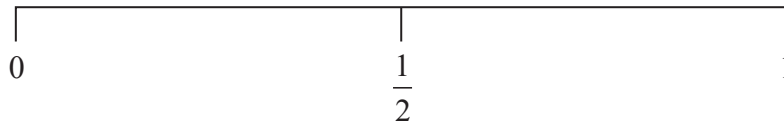
11 An ordinary fair dice is thrown once.

- (a) On the probability scale below, mark with a cross (×) the probability that the dice will land on a number less than 7



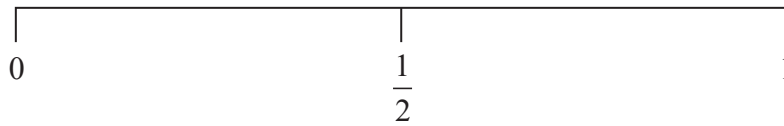
(1)

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



(1)

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



(1)

(Total for Question 11 is 3 marks)



*12 Here are two fractions.

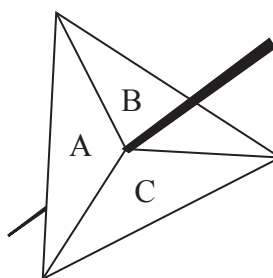
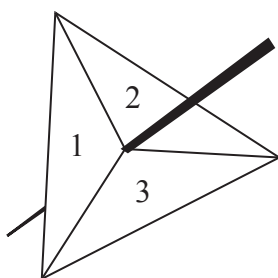
$$\frac{1}{6} \text{ and } \frac{2}{9}$$

Which is the smaller fraction?

You must show clearly how you get your answer.

(Total for Question 12 is 3 marks)

13 Here are two 3-sided spinners.



Lottie spins each spinner once.

Write down all the possible outcomes she can get.

.....

.....

.....

(Total for Question 13 is 2 marks)



14 (a) Write these numbers in order of size.

Start with the smallest number.

-3 2 0 -1

.....
(1)

(b) Work out $-3 + 5$

.....
(1)

(c) Work out $1 + 2 \times 3$

.....
(1)

(d) Put in brackets to make the following calculation correct.

$$2 \times 3 + 8 - 4 = 18$$

(1)

(e) Work out $5^2 - 2^3$

.....
(2)

(Total for Question 14 is 6 marks)

15 Here are the first four terms of a number sequence.

3 8 13 18

Here are the first four terms of a different number sequence.

4 7 10 13

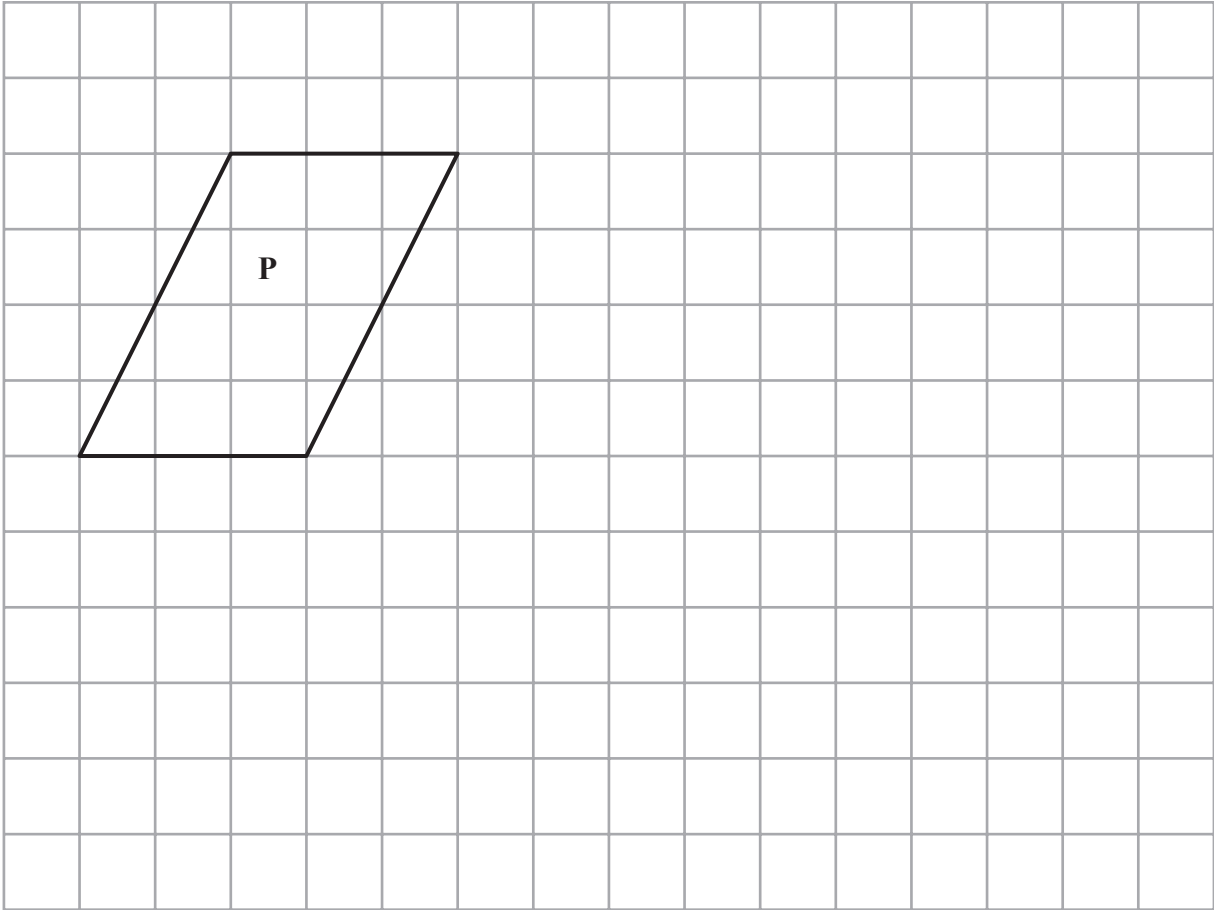
The number 13 is in both number sequences.

What is the next number that is in both number sequences?

.....
(Total for Question 15 is 2 marks)



16

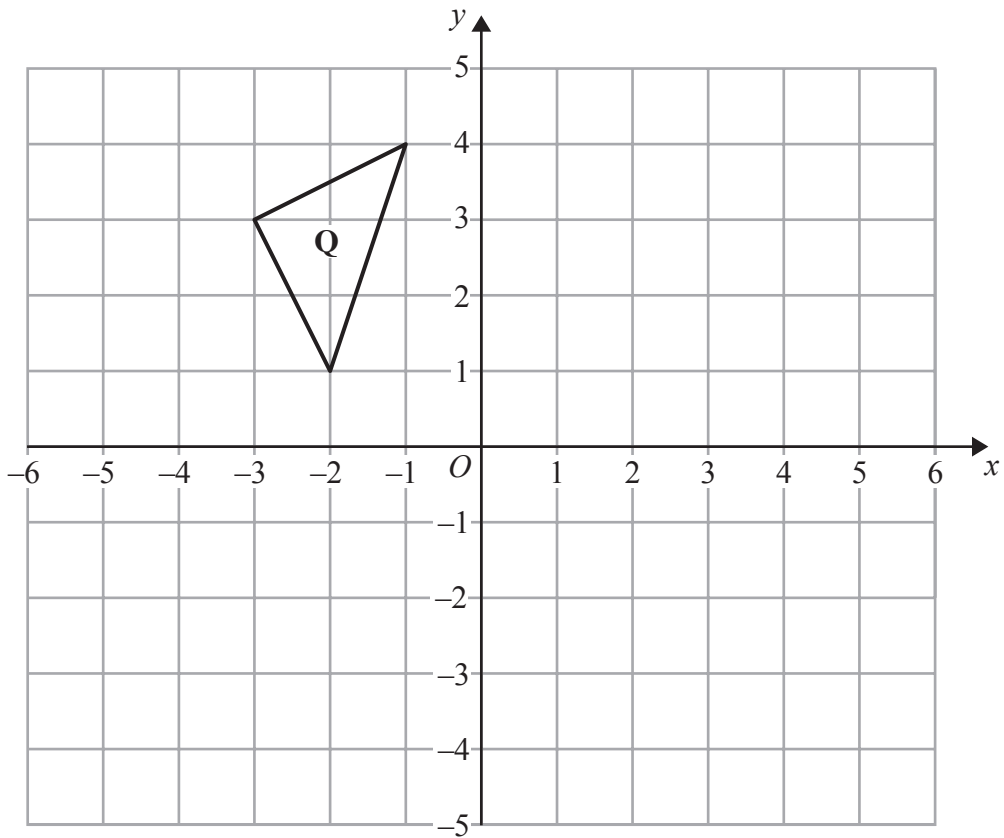


(a) (i) Write down the order of rotational symmetry of shape **P**.

(ii) On the grid above, draw an enlargement of shape **P** with a scale factor of 2

(3)





(b) On the grid, reflect triangle **Q** in the y -axis.

(1)

(Total for Question 16 is 4 marks)

17 (a) Solve $6p = 30$

.....
(1)

(b) Solve $12 + t = 19$

.....
(1)

(c) Solve $4x - 7 = 3$

.....
(2)

(Total for Question 17 is 4 marks)



18 There are 24 marbles in a bag.

8 of the marbles are gold.

6 of the marbles are silver.

The rest of the marbles are bronze.

One marble is to be taken at random from the bag.

- (a) What is the probability that this marble will be silver?
Give your answer as a fraction in its simplest form.

.....
(2)

- (b) What is the probability that this marble will be bronze?

.....
(2)

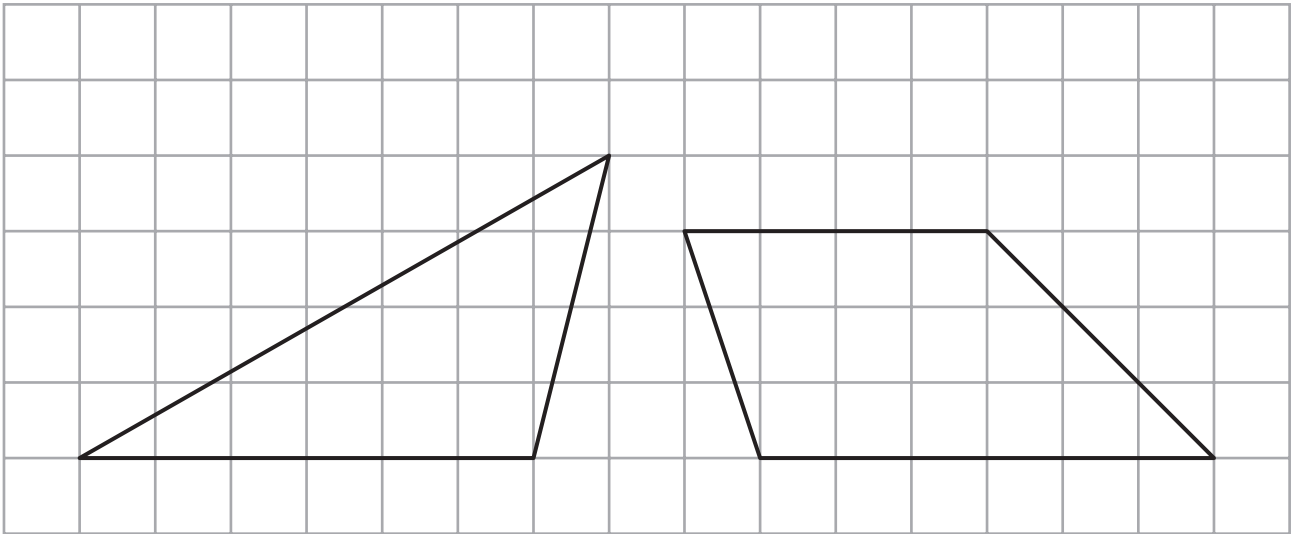
- (c) What is the probability that this marble will **not** be gold?

.....
(1)

(Total for Question 18 is 5 marks)



*19 The diagram shows two shapes on a grid of centimetre squares.



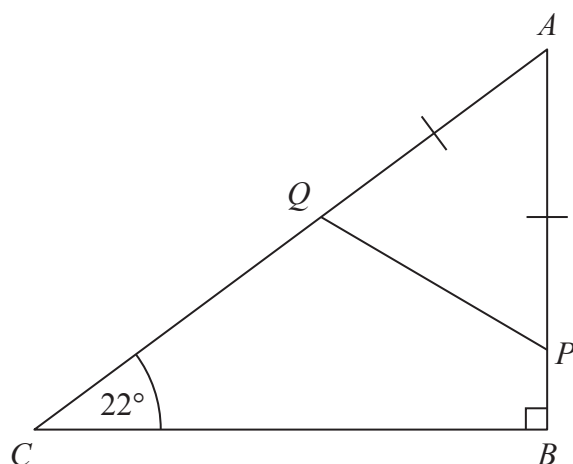
Compare the areas of these two shapes.

(Total for Question 19 is 4 marks)



*20

Diagram **NOT**
accurately drawn



ABC is a right-angled triangle.

Angle $B = 90^\circ$

Angle $ACB = 22^\circ$

P is a point on AB .

Q is a point on AC .

$AP = AQ$.

Work out the size of angle APQ .

Give reasons for each stage of your working.

(Total for Question 20 is 5 marks)



21 (a) Find two factors of 36 with a difference of 5

..... and
(2)

The Lowest Common Multiple (LCM) of three numbers is 30
Two of the numbers are 2 and 5

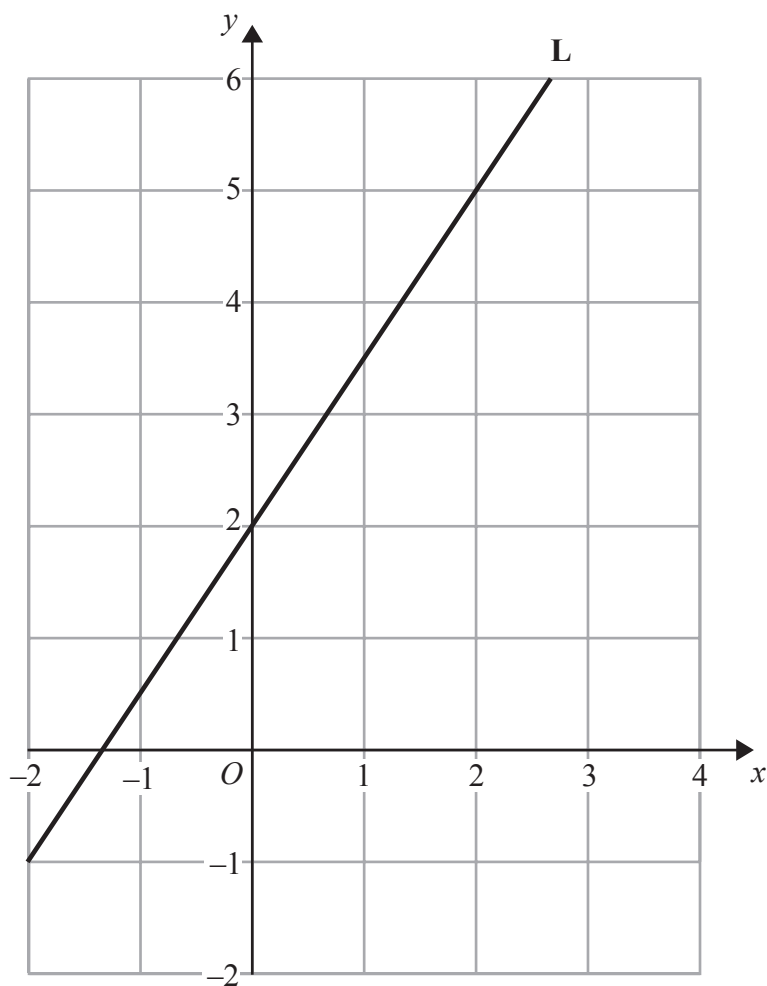
(b) What could be the third number?

.....
(2)

(Total for Question 21 is 4 marks)



*22 The diagram shows a straight line **L** drawn on a grid.



$y = 2x - 1$ is the equation of a different straight line.

Which straight line has the greater gradient?
Show how you get your answer.

(Total for Question 22 is 4 marks)



23 There are 50 counters in a bag.

The counters are blue or yellow or black or white.

A counter is taken at random from the bag.

The table shows each of the probabilities that the counter will be blue or black or white.

Colour	blue	yellow	black	white
Probability	0.4		0.3	0.16

Work out the number of yellow counters in the bag.

.....
(Total for Question 23 is 4 marks)



24 There are 30 children in a class.

21 of the children sing in the choir.

10 of the children play in the band.

6 of the children sing in the choir **and** play in the band.

(a) Draw a Venn diagram to show this information.

(4)

One of the children from the class is chosen at random.

(b) Work out the probability that this child plays in the band, but does **not** sing in the choir.

.....
(2)

(Total for Question 24 is 6 marks)



*25 $PQRS$ is a square.

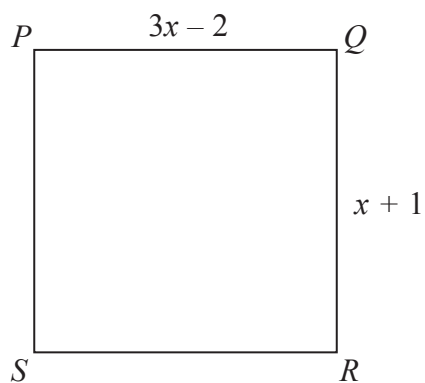


Diagram **NOT**
accurately drawn

All measurements are in centimetres.

Show that the perimeter of the square is 10 cm.

(Total for Question 25 is 4 marks)

TOTAL FOR PAPER IS 100 MARKS



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