Write your name here

Surname	Other names

Pearson
Edexcel GCSE

Centre Number | | | | | |

Candidate Number | | | | |

Methods in Mathematics

Unit 1: Methods 1

For Approved Pilot Centres ONLY

Foundation Tier

Tuesday 17 June 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 ▶

P43401A

5/5/6/6/

P 4 3 4 0 1 A 0 1 2 8

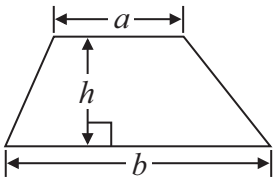
PEARSON

GCSE Mathematics 2MM01

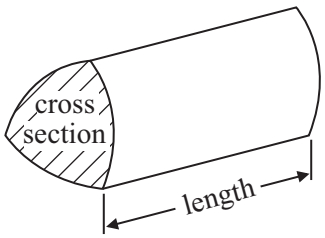
Formulae: Foundation Tier

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 × 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 **fifty two thousand and eighteen** in figures.

.....

(1)

(b) Write down the value of the **6** in the number 26 780

.....

(1)

(c) Write the number 6749 to the nearest hundred.

.....

(1)

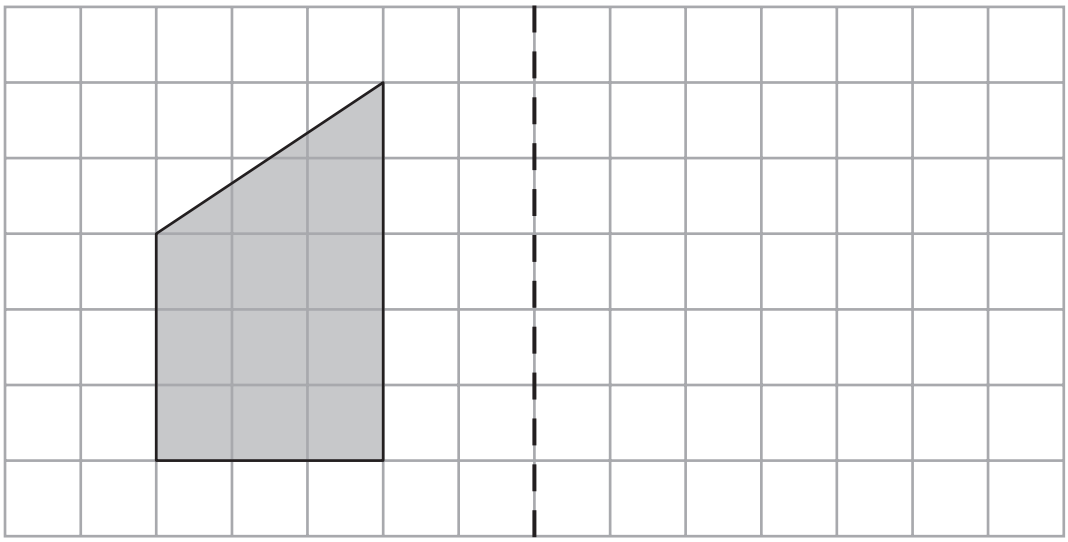
(d) Write 0.0763 correct to **one** significant figure.

.....

(1)

(Total for Question 1 is 4 marks)

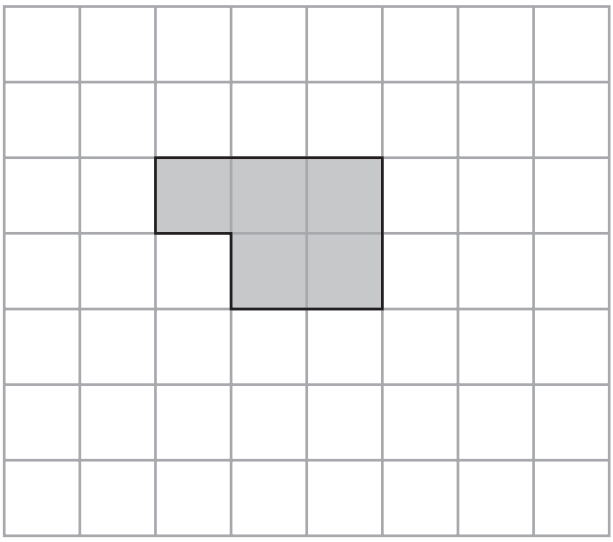
2 (a) Reflect the shaded shape in the mirror line.



mirror line

(2)

(b) On the grid below, shade **one** more square so that the shape has rotational symmetry of order 2



(1)

(Total for Question 2 is 3 marks)

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

23 20 17 14

(i) Write down the next term of the sequence.

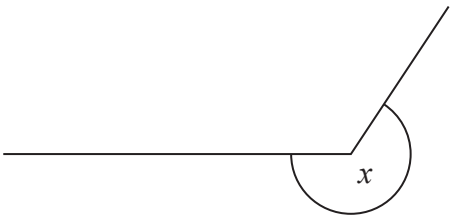
.....

(ii) Explain how you got your answer.

.....

(Total for Question 3 is 2 marks)

4



(a) Write down the mathematical name for the type of angle marked x.

.....

(1)

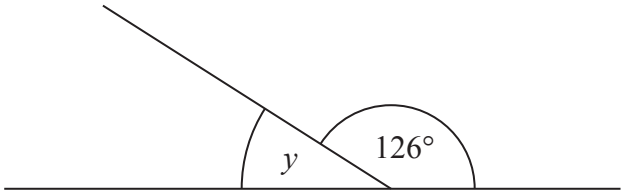


Diagram **NOT** accurately drawn

(b) (i) Work out the size of the angle marked y.

..... °

(ii) Give a reason for your answer.

.....

(2)

(c) Complete each statement correctly.

(i) The size of each angle of a rectangle is ..... °

(ii) The size of each angle of an equilateral triangle is ..... °

(2)

(Total for Question 4 is 5 marks)

***5** Here are three fractions.

$$2\frac{2}{5} \qquad \frac{14}{5} \qquad \frac{52}{20}$$

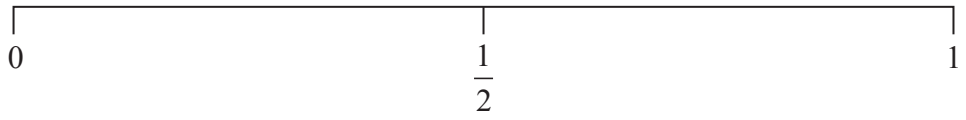
Which of these is the smallest fraction?

You must show how you get your answer.

(Total for Question 5 is 2 marks)

6 Tony throws a fair coin.

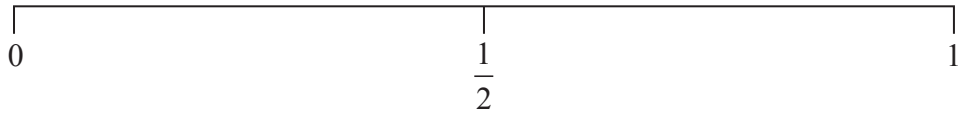
(a) On the probability scale, mark with a cross (×) the probability that the coin will land on tails.



(1)

Ali throws an ordinary 6-sided dice numbered from 1 to 6

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



(1)

There are 5 red beads, 2 blue beads and 4 yellow beads in a bag.

A bead is to be taken at random from the bag.

(c) (i) What colour of bead is **least** likely to be taken?

.....

(ii) What is the probability that the colour of the bead will be yellow?

.....

(3)

(Total for Question 6 is 5 marks)

7 (a) Work out 56×1000

.....

(1)

(b) Work out $783.5 \div 100$

.....

(1)

(c) Work out $870 - 249$

.....

(1)

Ben thinks of two numbers.

Ben adds the two numbers and gets 25
One number is 3 more than the other number.

(d) Find the two numbers.

..... and .....

(2)

(Total for Question 7 is 5 marks)

8 A letter is taken from Box A and a number is taken from Box B.

Box A

M
E

Box B

2
4
7

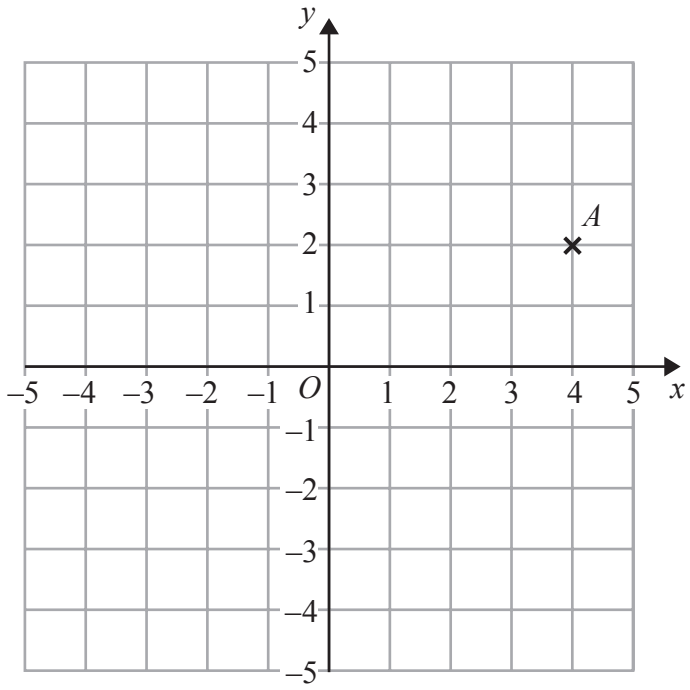
Show all the possible outcomes.

.....

.....

(Total for Question 8 is 2 marks)

9



(a) Write down the coordinates of point *A*.

(..... , ...)

(1)

(b) On the grid, mark with a cross (×) the point (−3, 0).
Label this point *B*.

(1)

(Total for Question 9 is 2 marks)

10 (a) Write down an even number.

.....

(1)

(b) Write down a square number.

.....

(1)

(c) Write down a prime number between 30 and 40

.....

(1)

(d) Find all the factors of 40

.....

(2)

(Total for Question 10 is 5 marks)

11 (a) Write these numbers in order of size.
Start with the smallest number.

–7 3 –9 –4 0

.....

(1)

(b) Work out $-6 + 10$

.....

(1)

(c) Work out $7 - -3$

.....

(1)

(Total for Question 11 is 3 marks)

12

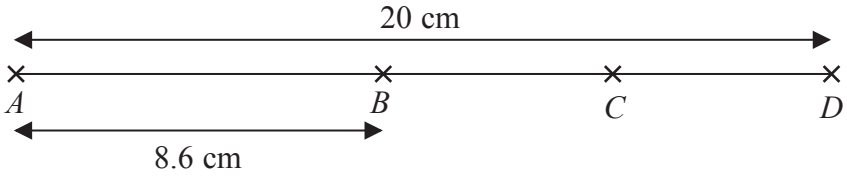


Diagram **NOT** accurately drawn

A, B, C and D are points on a straight line.
$AD = 20$ cm
$AB = 8.6$ cm
$BC = CD$

Work out the length of BC.

..... cm

(Total for Question 12 is 3 marks)

13 (a) Simplify $t + t + t$

.....

(1)

(b) Simplify $e \times 4 \times f$

.....

(1)

(c) Simplify $6m + 3k - 2m + 5k$

.....

(2)

(d) Simplify $y^4 \times y^3$

.....

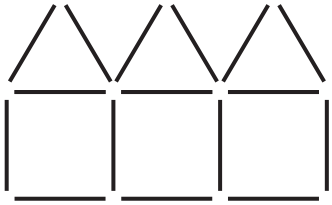
(1)

(Total for Question 13 is 5 marks)

14 Here is a sequence of patterns made from sticks.

pattern number 1

pattern number 2



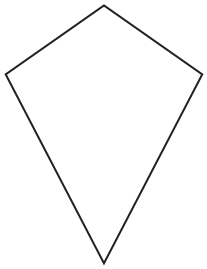
pattern number 3

Work out the number of sticks needed to make pattern number 10

.....

(Total for Question 14 is 3 marks)

15 (a) Here is a quadrilateral.



(i) Write down the mathematical name for this quadrilateral.

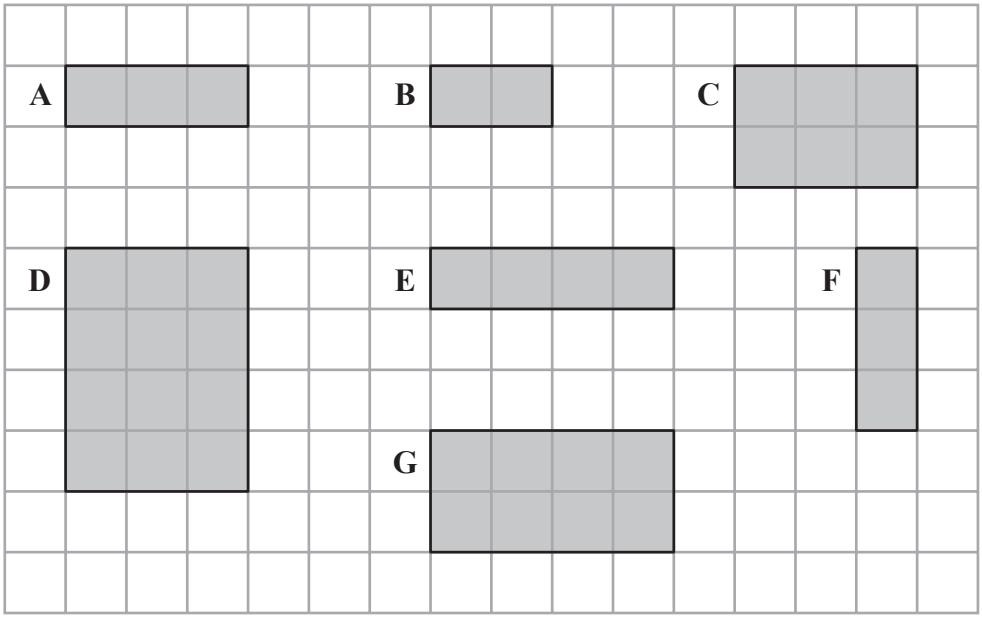
.....

(ii) How many lines of symmetry does this quadrilateral have?

.....

(2)

Here are 7 shaded rectangles drawn on a grid.



(b) One of the rectangles is congruent to rectangle **A**.

(i) Write down the letter of this rectangle.

.....

One of the rectangles is similar to rectangle **B**.

(ii) Write down the letter of this rectangle.

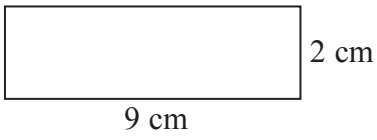
.....

(2)

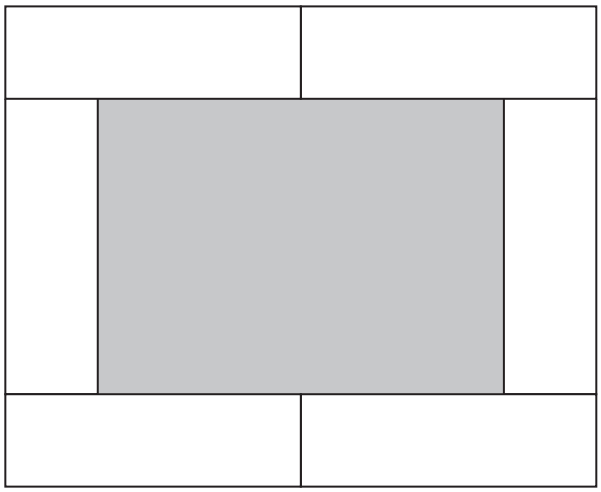
(Total for Question 15 is 4 marks)

16 Here is a 9 cm by 2 cm rectangle.

Diagram **NOT** accurately drawn



Six of these rectangles are used to make this pattern.



Work out the area that is shaded.

..... cm^2

(Total for Question 16 is 3 marks)

17 $p = 3a + 2b$

$a = 10$
$b = 4$

Work out the value of p.

.....

(Total for Question 17 is 2 marks)

18 There are 11 counters in a bag.
6 of these counters are green.
5 of these counters are red.

Some more red counters are put into the bag.

A counter is then taken at random from the bag.

The probability that the counter is red is $\frac{3}{5}$

How many red counters were put into the bag?

.....

(Total for Question 18 is 3 marks)

***19** The diagram shows an isosceles triangle.

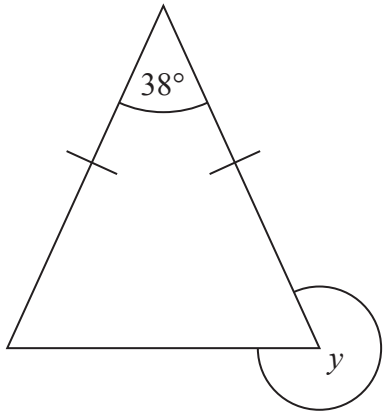


Diagram **NOT** accurately drawn

Work out the size of angle y.

Give reasons for your answer.

(Total for Question 19 is 4 marks)

20 (a) Solve $5e = 15$

.....

(1)

(b) Solve $f + 11 = 20$

.....

(1)

(c) Solve $3x - 4 = 17$

.....

(2)

(Total for Question 20 is 4 marks)

21 (a) Work out 523×64

.....

(3)

(b) Work out $5810 \div 14$

.....

(3)

(Total for Question 21 is 6 marks)

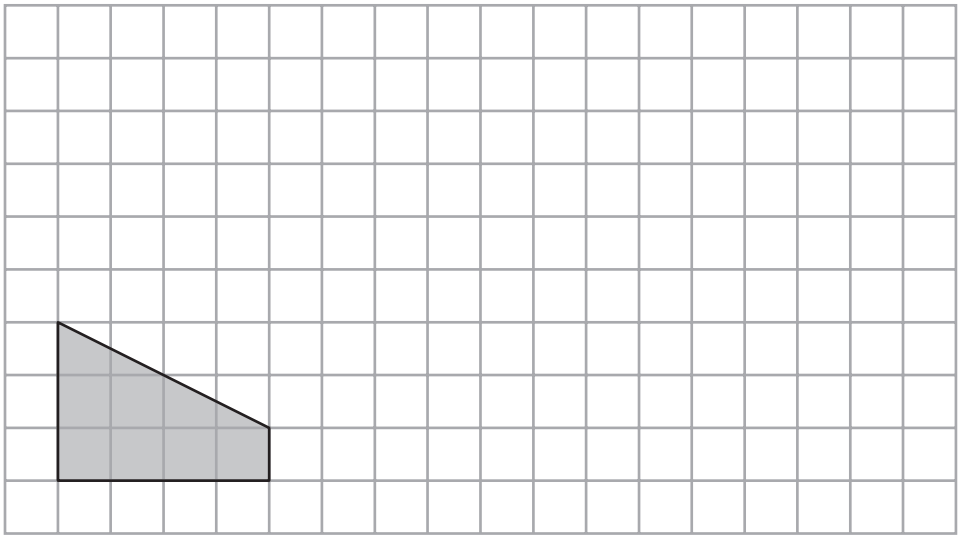
***22** Which of these is the largest fraction?

$$\frac{7}{10} \qquad \frac{3}{5} \qquad \frac{29}{40}$$

You must show clearly how you got your answer.

(Total for Question 22 is 3 marks)

23 A shaded shape is shown on the grid.



On the grid, draw an enlargement of the shaded shape with scale factor 2

(Total for Question 23 is 2 marks)

***24** Here is a shape.

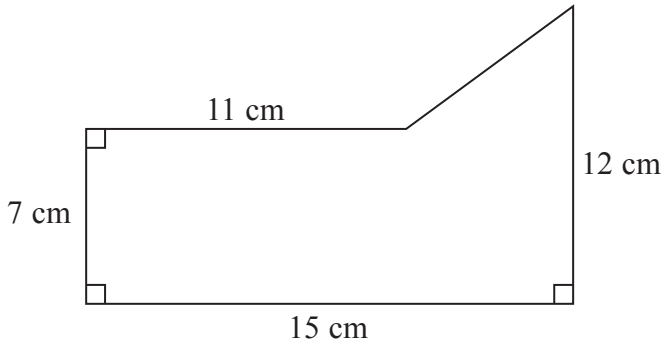
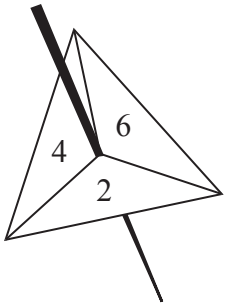


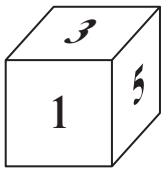
Diagram **NOT** accurately drawn

Work out the area of this shape.

(Total for Question 24 is 4 marks)

25 Sue has a fair 3-sided spinner numbered 2, 4 and 6
She also has a fair 6-sided dice numbered 1, 2, 3, 4, 5 and 6





Sue spins the spinner once and rolls the dice once.
She adds the two numbers together to get the total score.

(i) Work out the probability that the total score will be 7

.....

(ii) Work out the probability that the total score will be less than 6

.....

(Total for Question 25 is 5 marks)

26 Here is a rectangle.

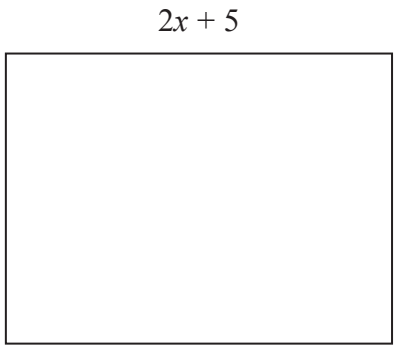


Diagram **NOT** accurately drawn

All the measurements are in centimetres.

The perimeter of the rectangle is 46 cm.

Work out the area of the rectangle.
You must show all your working.

..... cm^2

(Total for Question 26 is 5 marks)

27 Here is some information about the students in Year 10

There are 60 students in Year 10
34 of the students study French.
25 of the students study German.
18 of the students study both French and German.

(a) Draw a suitable diagram for this information.

(4)

A teacher chooses at random one of the 60 students.

(b) Work out the probability that this student does **not** study French or German.

(2)

(Total for Question 27 is 6 marks)

TOTAL FOR PAPER IS 100 MARKS

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