Write your name here

Surname		Other names

Edexcel GCSE

Centre Number

Candidate Number

Methods in Mathematics
Unit 1: Methods 1
For Approved Pilot Centres ONLY

Foundation Tier

Monday 17 June 2013 – 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.
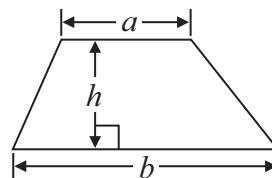
Turn over ▶

P 4 0 6 5 0 A 0 1 2 4

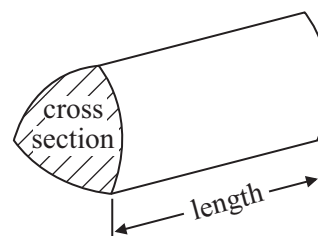**PEARSON**

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 3506 in words.

....

....

(1)

(b) Write the number **one thousand four hundred and twenty five** in figures.

....

(1)

(c) Write 82 553 correct to the nearest thousand.

....

(1)

(d) Write 3.74 correct to **one** decimal place.

....

(1)

(Total for Question 1 is 4 marks)

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

18   84   45   138   53

....

(1)

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

5.06   0.56   5.6   0.65   6.5

....

(1)

(Total for Question 2 is 2 marks)

3

| impossible | unlikely | even | likely | certain |

Use a word from the box that best describes the likelihood of each of the following events.

(a) You take a red marble out of a bag that has only blue and green marbles in it.

....

(1)

(b) You throw a fair coin and get a tail.

....

(1)

(c) You throw a fair dice and get a number less than 5

....

(1)

(Total for Question 3 is 3 marks)

4
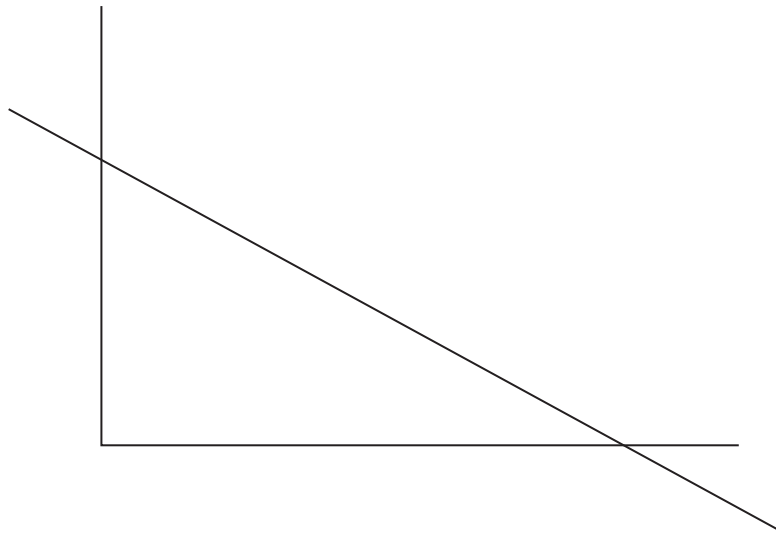
(a) Mark, with the letter *A*, an acute angle.

(1)

(b) Mark, with the letter *R*, a right angle.

(1)

(Total for Question 4 is 2 marks)

5 (a) Work out $367 + 128$

....
(2)

(b) Work out $15.6 - 4.37$

....
(2)

(c) Work out 3.8×4

....
(2)

(d) Work out $-7 + 9$

....
(1)

(e) Work out 5×-6

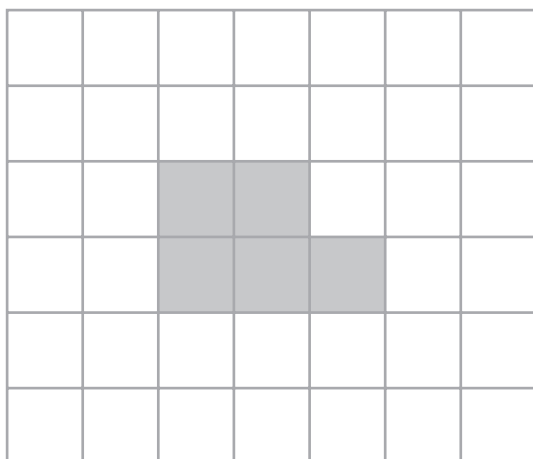...
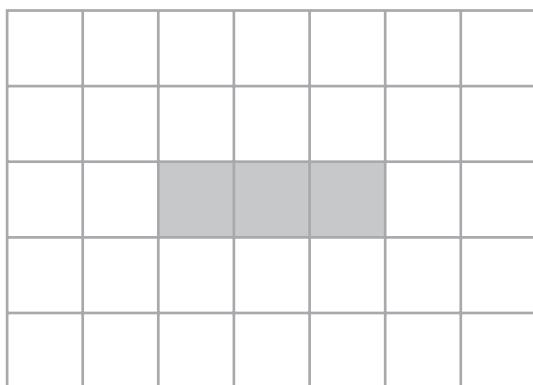**(1)**

(Total for Question 5 is 8 marks)

6 (a) On the diagram below, shade **one** square so that the shape has rotational symmetry of order 2

(1)

(b) On the diagram below, shade **one** square so that the shape has only one line of symmetry.

(1)

(Total for Question 6 is 2 marks)

*7   Which is bigger $\dfrac{2}{5}$ or 0.6?
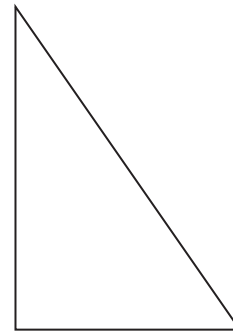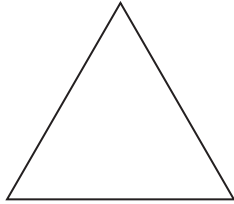
Give a reason for your answer.

(Total for Question 7 is 3 marks)

8 Write down the mathematical name of each of these triangles.

(i) .... (ii) ....

(Total for Question 8 is 2 marks)

9 Here are the first five terms of two number sequences, A and B.

| Sequence A | 1 | 3 | 5 | 7 | 9 |
| Sequence B | 0 | 3 | 6 | 9 | 12 |

The numbers 3 and 9 are in both sequences.

Find another number that is in both sequences.

....

(Total for Question 9 is 3 marks)

10 (a) Work out $12 \div 4 + 7$

....
(1)

(b) Work out $(4 + 3) \times 5$

....
(1)

(c) Work out $20 - 6 \times 2$

....
(1)

(Total for Question 10 is 3 marks)

11 Here is a list of eight numbers.

  6   16   17   18   24   27   33   37

From the list, write down

(i) **two** numbers that add up to 50

.... and ....

(ii) a factor of 48

....

(iii) a multiple of 12

....

(iv) a square number

....

(Total for Question 11 is 4 marks)

*12 Here are three calculations.

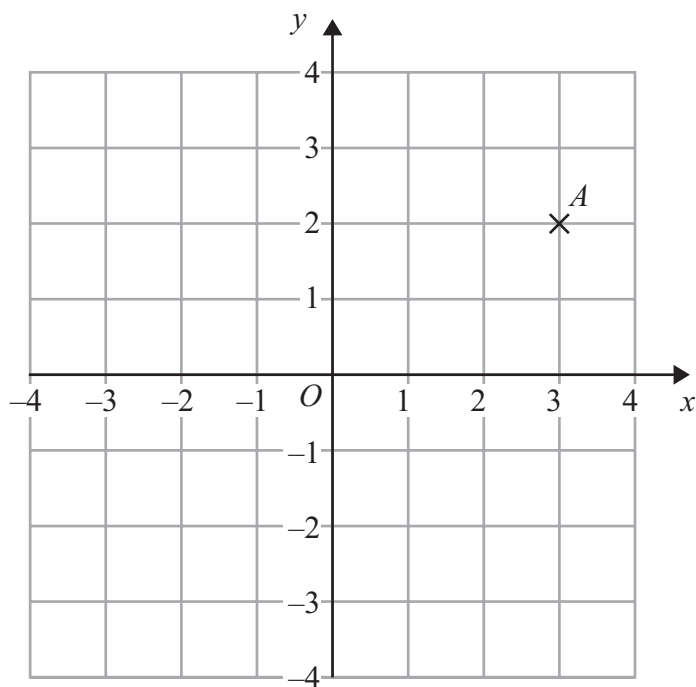| The sum of 14 and 19 | The difference between 57 and 29 |

| The product of 9 and 4 |

Which of these calculations has the biggest answer?
You must show how you got your answer.

(Total for Question 12 is 3 marks)

13 Here is a coordinate grid.

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

(.............................. , ...)

(1)

(b) On the grid, mark with a cross (×) the point (–2, 1).
Label this point *B*.

(1)

(Total for Question 13 is 2 marks)

14 (a) Write $\frac{9}{15}$ in its simplest form.

....

(1)

(b) Write $\frac{29}{8}$ as a mixed number.

....

(1)

(c) Work out $\frac{4}{9} + \frac{1}{3}$

....

(2)

(Total for Question 14 is 4 marks)

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

$$9 \qquad 13 \qquad 17 \qquad 21 \qquad 25$$

(a) Find the 8th term of the sequence.

....

(1)

200 is **not** in this sequence.

(b) Explain why.

....

....

(1)

(Total for Question 15 is 2 marks)

16 There are four counters in a bag.
There is one red counter, one blue counter, one green counter and one yellow counter.

Roberto takes at random a counter from the bag.

(a) What is the probability that he takes a blue counter?

....

(1)

Roberto puts the counter back in the bag.

Tia takes at random two counters from the bag.
She records the colours of the counters.

(b) Write down all the possible outcomes.

....

....

....

(2)

(Total for Question 16 is 3 marks)

17 (a) Simplify $w + w + w - w$

....

(1)

(b) Simplify $5 \times d \times e$

....

(1)

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

....

(2)

(Total for Question 17 is 4 marks)

18 Here is a 5-sided spinner.
The sides of the spinner are labelled A, B, C, D and E.

Izrah spins the spinner 40 times.
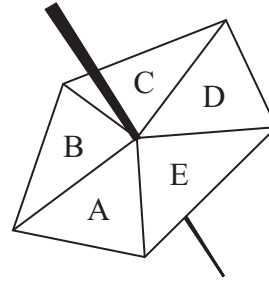
The table shows the number of times the spinner lands on A, on B, on C, on D and on E.

Outcome (letter)	A	B	C	D	E
Frequency	18	13	3	4	2

(a) Is the spinner biased? ....

Use the numbers in the table to explain your answer.

....

....

....

(1)

Thomas spins the spinner once.

(b) Using the information in the table find an estimate for the probability that the spinner will land on E.

....

(2)

(Total for Question 18 is 3 marks)

19 (a) Solve $3z = 21$

$z =$ ....
(1)

(b) Solve $y - 10 = 4$

$y =$ ....
(1)

(c) Solve $5x + 6 = 21$

$x =$ ....
(2)

(d) Factorise fully $6ef + 9e^2$

....
(2)

(Total for Question 19 is 6 marks)

20 Here is a square.
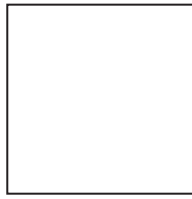
Diagram **NOT** accurately drawn

The square has a perimeter of 24 cm.

Five of these squares are used to make this shape.
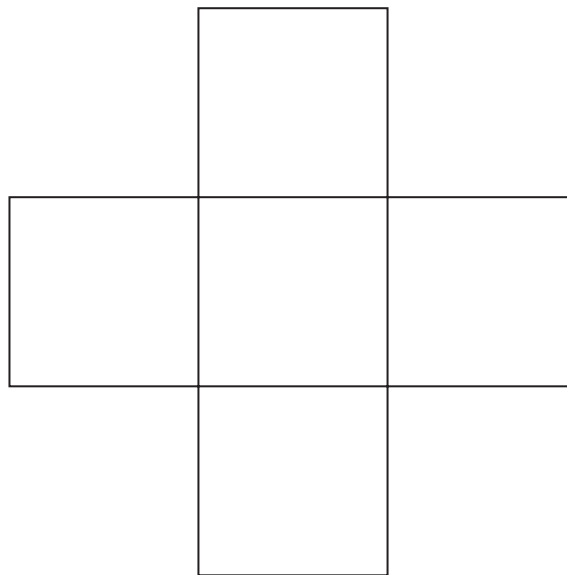
Diagram **NOT** accurately drawn

Work out the perimeter of this shape.

.... cm

(Total for Question 20 is 3 marks)

21 Work out 427×56

....

(Total for Question 21 is 3 marks)

22
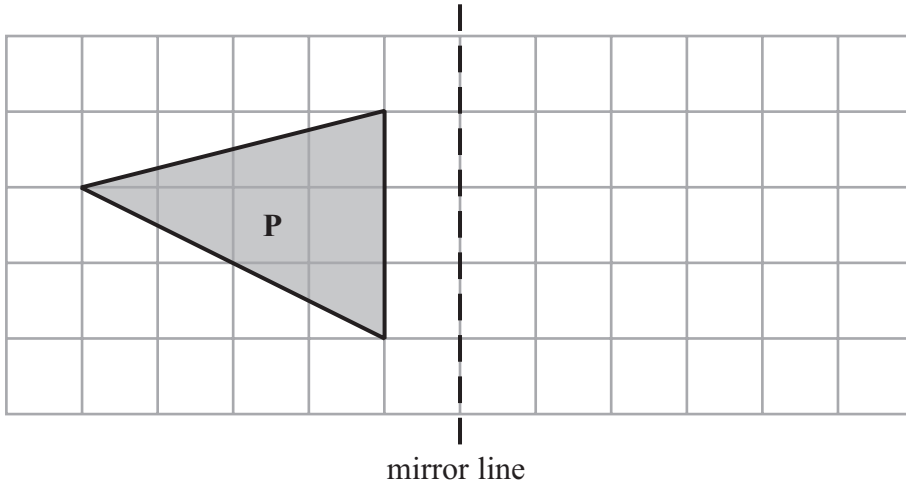
mirror line

(a) Reflect shape **P** in the mirror line.

(1)
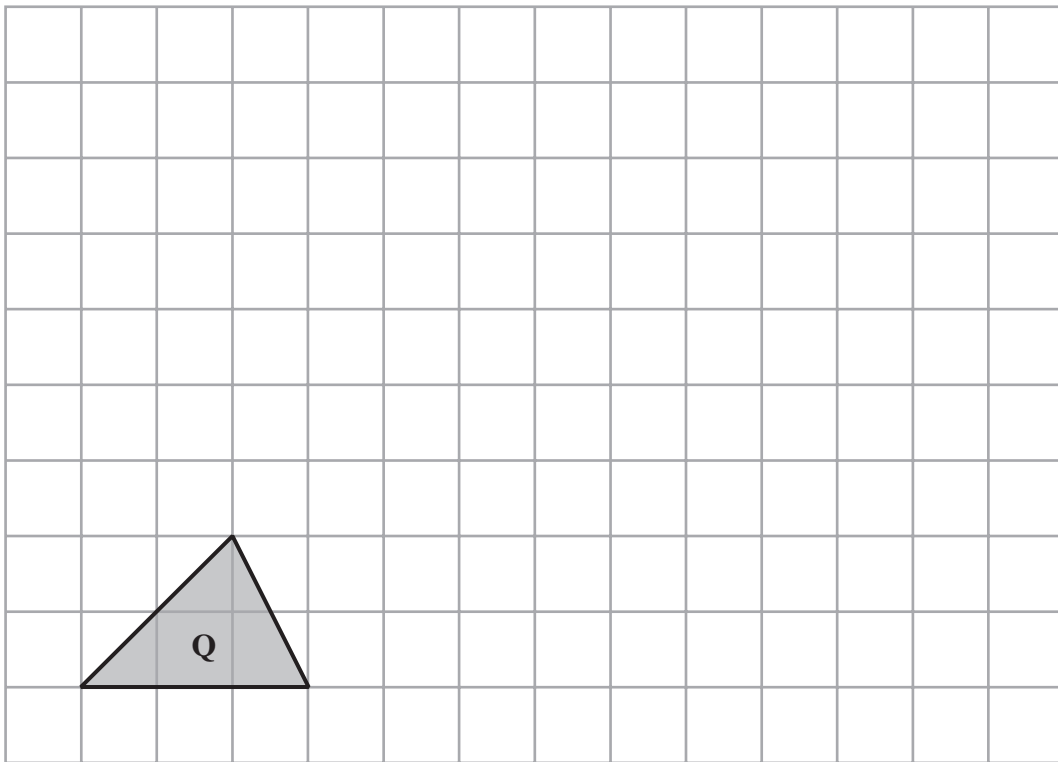
(b) On the grid, draw an enlargement of shape **Q** with a scale factor of 2
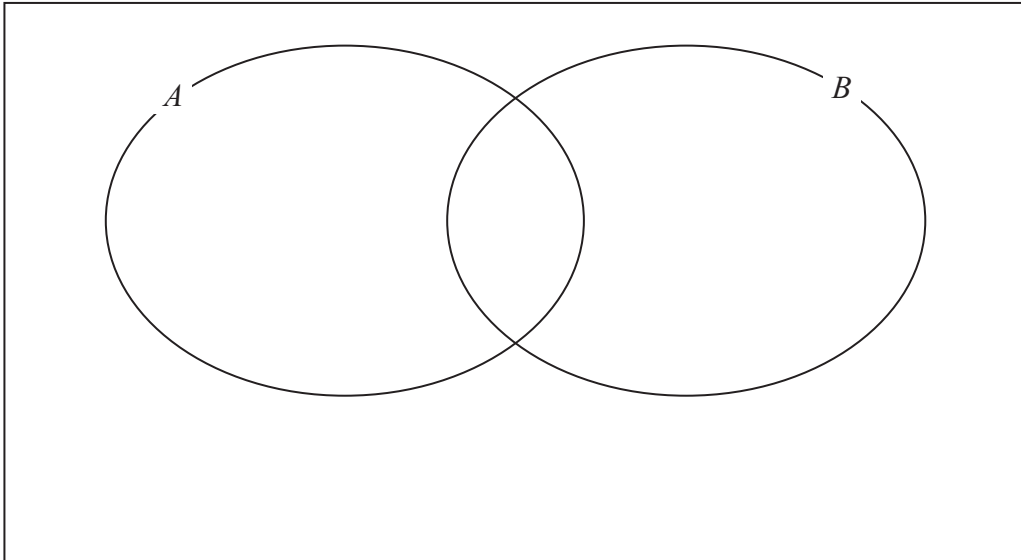
(2)

(Total for Question 22 is 3 marks)

23 Here is a list of numbers.

30   31   32   33   34   35   36   37   38   39   40

set A = {30, 33, 36, 39}
set B = {31, 33, 35, 37, 39}

(a) Write each number from the list in the correct place in the Venn diagram.

(4)

A number is chosen at random from the numbers in the list.

(b) Find the probability that the number is in both set A and set B.

P($A \cap B$) = ...

(1)

(c) Find the probability that the number is **not** in set A.

P(A') = ...
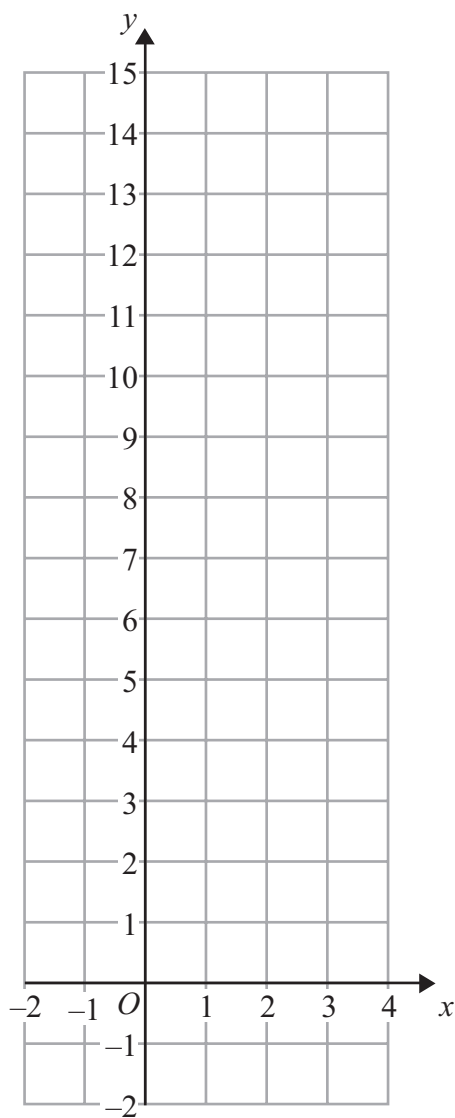
(1)

(Total for Question 23 is 6 marks)

24 (a) On the grid, draw the graph of $y = 3x + 5$ for values of x from –2 to 3

(3)

*(b) Explain why the point (6, 24) does **not** lie on the line $y = 3x + 5$

(2)

(Total for Question 24 is 5 marks)

25 Given that

$$124 \times 68 = 8432$$

work out the value of

(a) 680×124

....
(1)

(b) 1.24×6.8

....
(1)

(c) 124×34

....
(1)

(Total for Question 25 is 3 marks)

26 Sophie has a fair 6-sided dice numbered 1, 2, 3, 4, 5 and 6
She also has a fair 4-sided dice numbered 1, 3, 5 and 7

Sophie rolls each dice once.
Each dice lands on a number.
She **adds** the two numbers together to get the score.

(i) Work out the probability that the score will be 12

....

(ii) Work out the probability that the score will be less than 5

....

(Total for Question 26 is 5 marks)

27 Here is a symmetrical shape.

10 cm

Diagram **NOT**
accurately drawn

10 cm

4 cm

4 cm

Work out the area of the shape that is shaded.

....

(Total for Question 27 is 4 marks)

Turn over for Question 28

*28 The diagram shows a triangle.
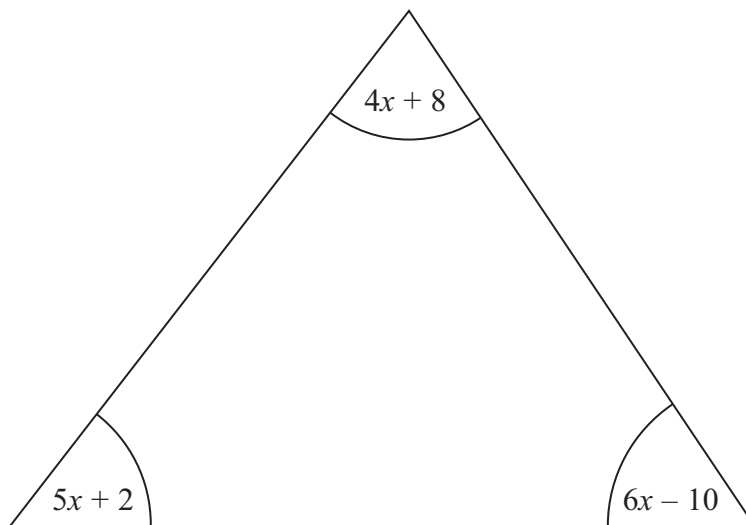

Diagram **NOT** accurately drawn

All the angles are measured in degrees.

Show that the triangle is isosceles.

(Total for Question 28 is 5 marks)

TOTAL FOR PAPER IS 100 MARKS