Write your name here

Surname _____

Other names _____

Edexcel GCSE

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Candidate Number ☐☐☐☐

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

Monday 13 June 2011 – Afternoon
Time: 1 hour 45 minutes

Paper Reference
5MM1F/01

You must have:
Ruler graduated in centimetres and millimetres, protractor, 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
  – *you should take particular care on these questions with your spelling, punctuation and grammar, as well as the clarity of expression*.

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.
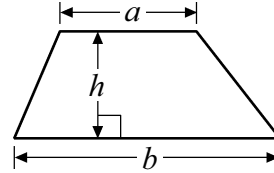
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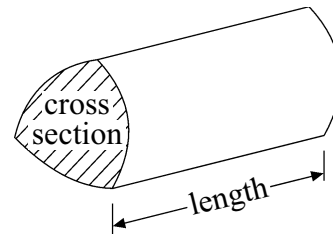advancing learning, changing lives

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

$\text{P 3 8 9 5 5 A 0 2 2 4}$

Answer ALL Twenty Three questions.

Write your answers in the spaces provided.

You must NOT use a calculator.

You must write down all stages in your working

1 (a) Write the number **fifteen thousand two hundred and four** in figures.

....
(1)

(b) Write the number 3076 in words.

....
(1)

(c) Write down the value of the figure **3** in the number 23 519

....
(1)

(d) What is 45 261when rounded to the nearest hundred?

....
(1)

(e) Write 7215 correct to **two** significant figures.

....
(1)

(Total for Question 1 is 5 marks)

2   (a) (i)   On the grid below draw a triangle with **two** equal sides.
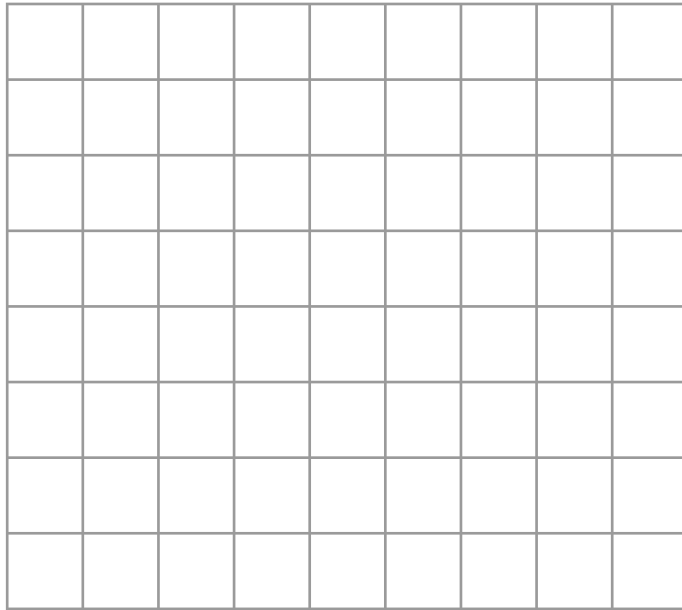
(ii)   Write down the name of the type of triangle you have drawn.

.... triangle

(2)

(b) (i)   On the grid below draw a quadrilateral that has one pair of parallel sides.

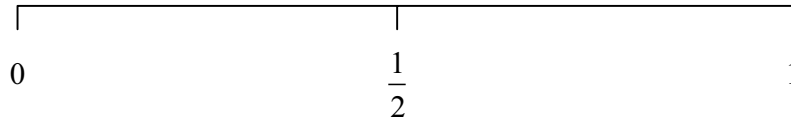(ii)   Write down the name of the type of quadrilateral you have drawn.

....

(2)

(Total for Question 2 is 4 marks)

3 (a) Rachel throws a fair coin.

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

```
    ┌──────────────────┬──────────────────┐
    0                  1                   1
                       ─
                       2
```

(1)

(b) Chris throws an ordinary 6-sided dice numbered from 1 to 6

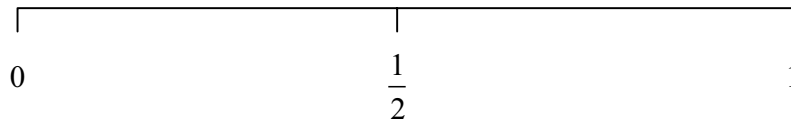On the probability scale, mark with a cross (×), the probability an 8 will be thrown.

```
    ┌──────────────────┬──────────────────┐
    0                  1                   1
                       ─
                       2
```
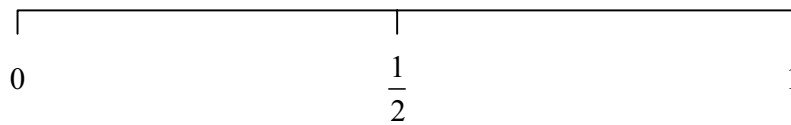
(1)

(c) In a bag, there are four red sweets and six green sweets.
Bill takes at random a sweet from the bag.

On the probability scale, mark with a cross (×), the probability he will take a green sweet.

```
    ┌──────────────────┬──────────────────┐
    0                  1                   1
                       ─
                       2
```
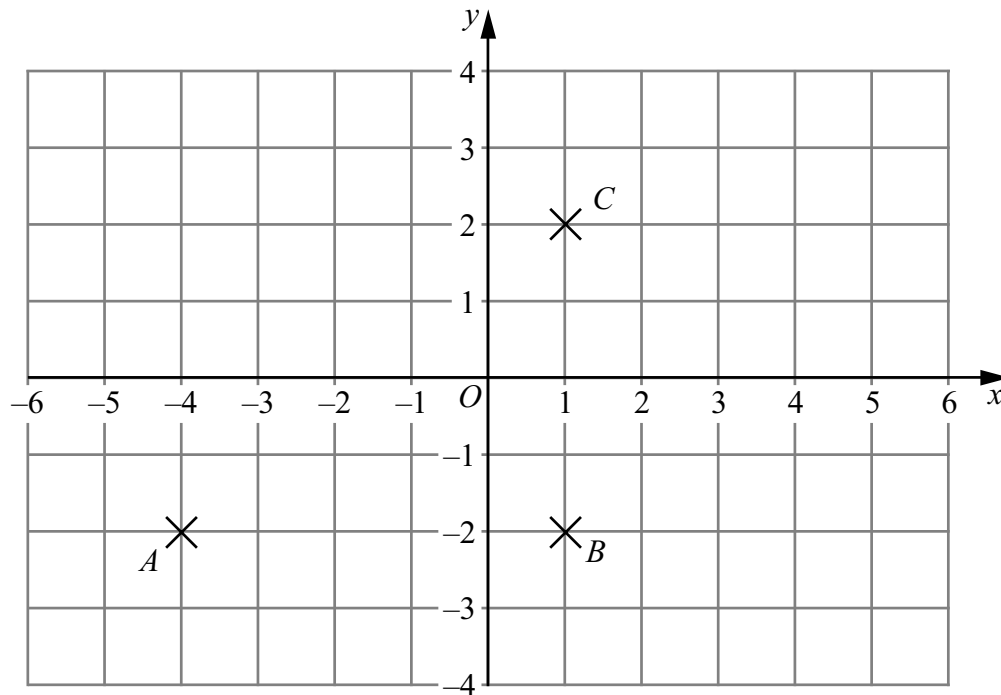
(1)

(Total for Question 3 is 3 marks)

4 Find **four different** prime numbers you can add together to get a number greater than 30 and less than 40

....

(Total for Question 4 is 3 marks)

5 Here is a grid of centimetre squares.

(a) Write down the coordinates of the points

  (i) *C*

  ....

  (ii) *A*

  ....
  (2)

ABCD is a rectangle.

(b) (i) On the grid, mark with a cross (×) the point D so that *ABCD* is a rectangle.
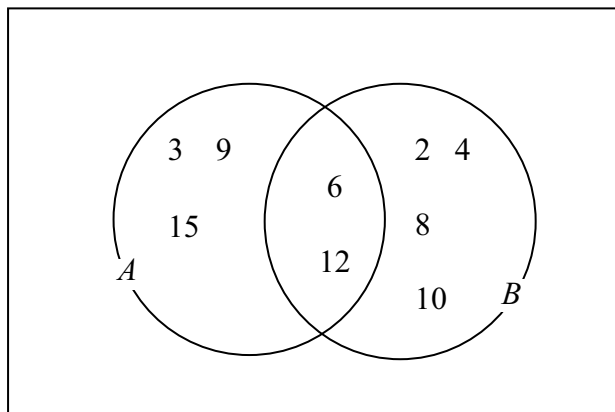
  (ii) Write down the coordinates of *D*.

  ....
  (2)

(Total for Question 5 is 4 marks)

6 Here is a Venn diagram.

(a) Write down the numbers that are in set *A*.

....

(2)

(b) Write down the numbers that are in both set *A* **and** set *B*.

$A \cap B = $ ....

(1)

(Total for Question 6 is 3 marks)

7
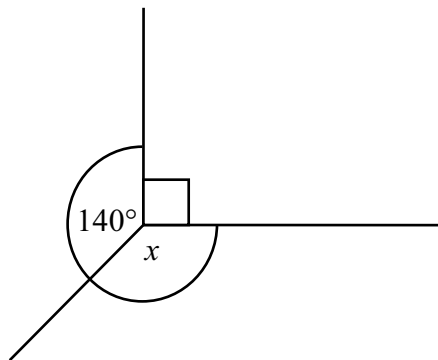
Diagram **NOT**
accurately drawn

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

....

(1)

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

.... °

(ii) Give a reason for your answer.

....

(3)

(Total for Question 7 is 4 marks)

Turn over ▶

8 Here are some patterns made from sticks.
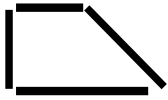
Pattern number 1   Pattern number 2   Pattern number 3

(a) Draw Pattern number 4

(1)

(b) Complete the table

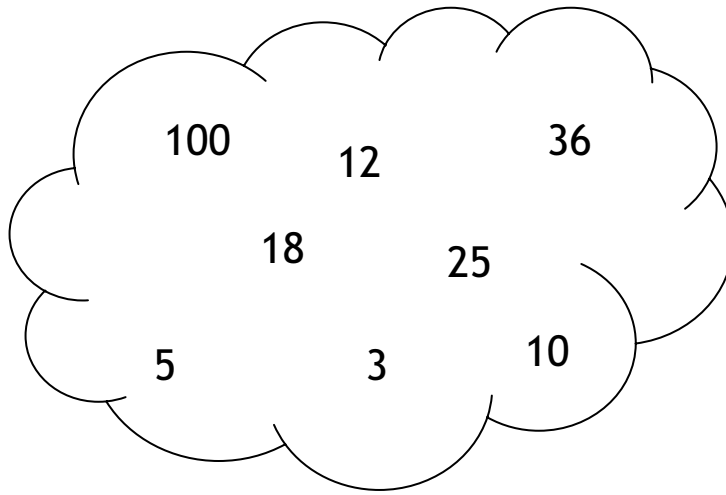| Pattern number	Number of sticks
1	4
2	7
3	10
4	....
10	....
....	76

(3)

(c) Find an expression, in terms of n, for the number of sticks needed for Pattern number n.

....

(2)

(Total for Question 8 is 6 marks)

9

From the numbers in the cloud, write down

(a) the square of 6

....
(1)

(b) the value of $\sqrt{100}$

....
(1)

(c) a multiple of 5

....
(1)

(d) a factor of 24

....
(1)

(Total for Question 9 is 4 marks)

10 Here are five shapes.
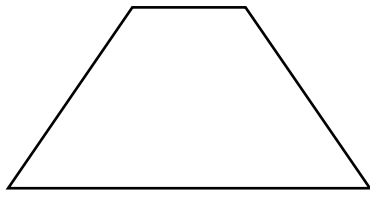
A

B
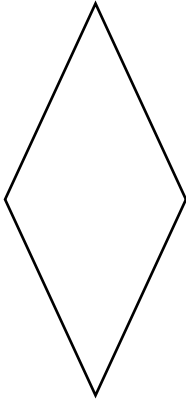
C
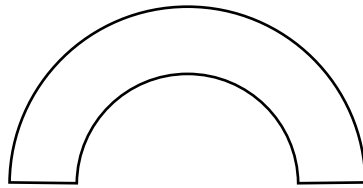
D
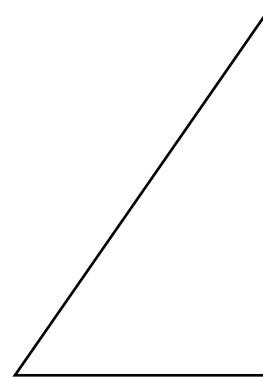
E

Two of these shapes have only **one** line of symmetry.

(a) Write down the letter of each of these **two** shapes.

.... and ....
(2)

Two of these shapes have rotational symmetry of order 2

(b) Write down the letter of each of these **two** shapes.

.... and ....
(2)

(Total for Question 10 is 4 marks)

11 There are 20 counters in a box.

5 counters are red.
4 counters are green.
The rest of the counters are blue.

Hajra takes at random one of the counters from the box.

What is the probability that she takes

(i) a red counter,

....

(ii) a blue counter,

....

(iii) a counter that is not green?

....

(Total for Question 11 is 5 marks)

12 (a) Simplify $x + x + x$

....

(1)

(b) Simplify $4y + 3y - 2y$

....

(1)

(c) Simplify $5p + 6r - p - 8r$

....

(2)

(Total for Question 12 is 4 marks)

13 Here are 6 diagrams and 6 labels.
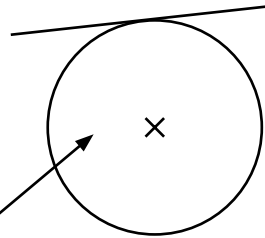In each diagram the centre of the circle is shown with a cross (×).

Match each diagram to its label.
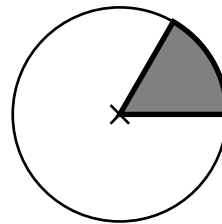One has been done for you.
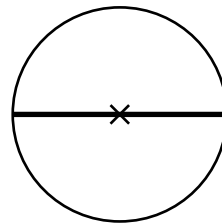
Label   **Diagram**
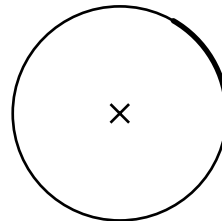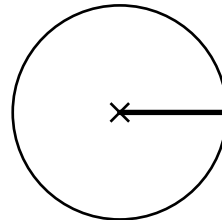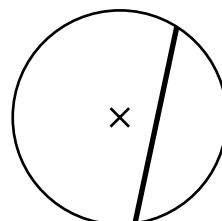
Circle and
diameter

Circle and
radius

Circle and
tangent

Circle and
chord

Circle and
arc

Circle and
sector

(Total for Question 13 is 4 marks)

14 (a) Work out 374×53

....
(3)

(b) Work out $9798 \div 46$

....
(3)

(Total for Question 14 is 6 marks)

15 (a) Work out $\quad 2 + 3 \times 5$

....
(1)

(b) Work out $\quad 18 \div 2 + 4$

....
(1)

(c) Work out $\quad 4.575 \times 100$

....
(1)

(d) Work out $\quad 2 \times 3^2$

....
(1)

(e) Work out $\quad -5 \times -4$

....
(1)

(Total for Question 15 is 5 marks)

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

$\qquad$ 63 $\qquad$ 97 $\qquad$ 59 $\qquad$ 88 $\qquad$ 72 $\qquad$ 90

....
(1)

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

$\qquad$ 5.2 $\qquad$ 0.52 $\qquad$ 0.025 $\qquad$ 0.91 $\qquad$ 0.019

....
(1)

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

$\qquad$ 0 $\qquad$ 2 $\qquad$ −5 $\qquad$ −2 $\qquad$ 3 $\qquad$ − 0.5

....
(1)

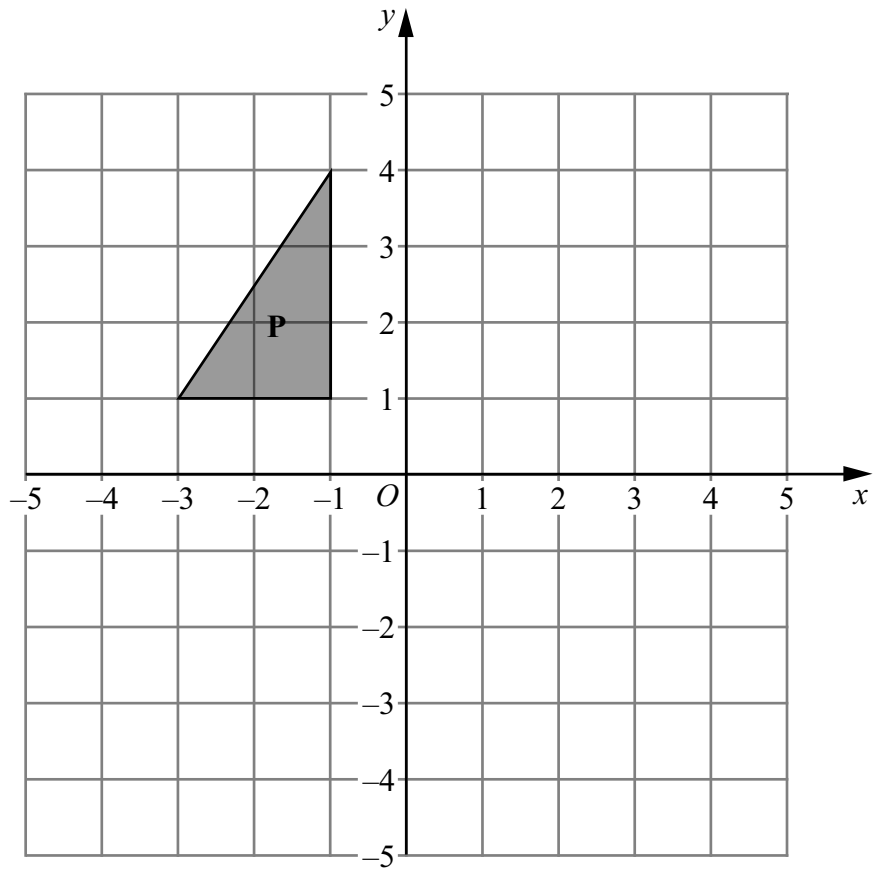**(Total for Question 16 is 3 marks)**

*17 Which of these fractions is the larger?

$$\frac{2}{3} \quad \text{or} \quad \frac{3}{5}$$

You must show clearly how you got your answer.

(Total for Question 17 is 3 marks)
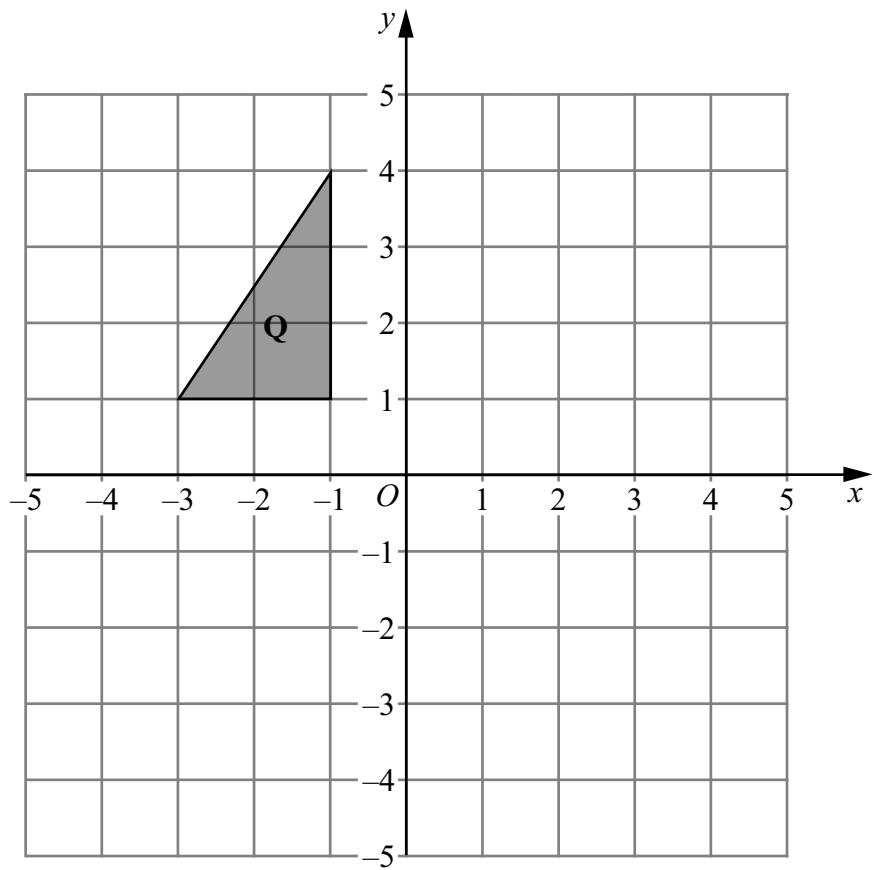
Turn over ▶

18

(a) Reflect triangle **P** in the x axis.
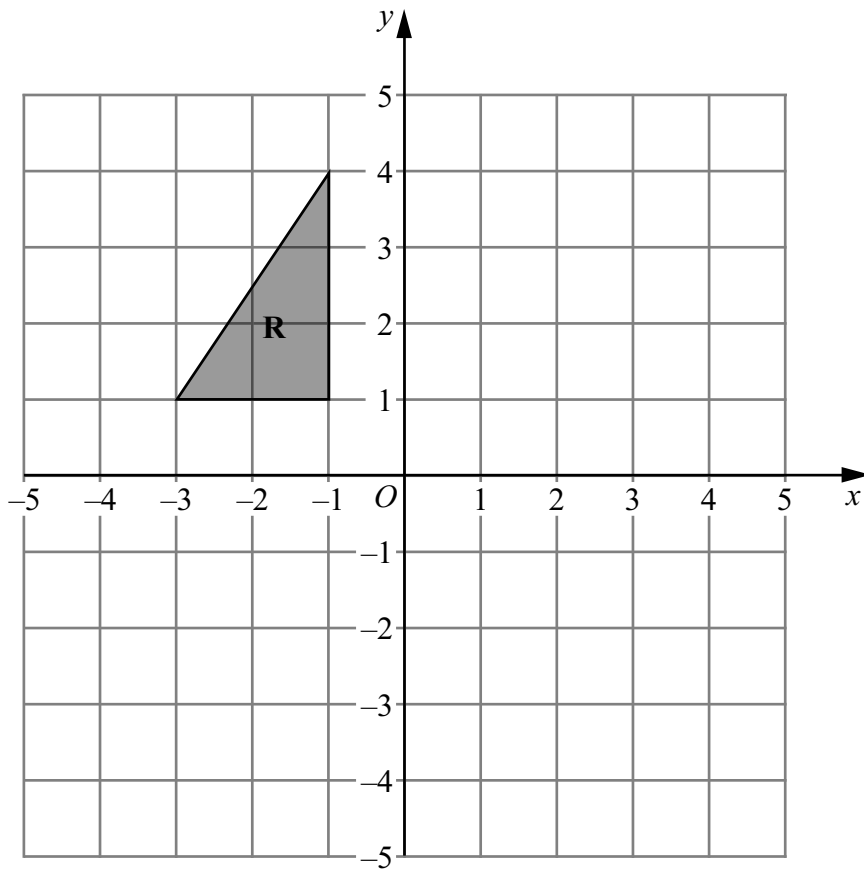
(2)

(b) Translate triangle **Q** by vector $\begin{pmatrix} 4 \\ -3 \end{pmatrix}$.

(2)
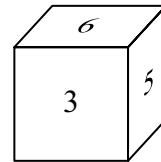
(c) Rotate triangle **R** 180° centre (0, 2).
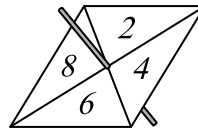

(2)

(Total for Question 18 is 6 marks)

19 Jim has a fair 4-sided spinner numbered 2, 4, 6 and 8 and a fair 6-sided dice.

He spins the spinner once and rolls the dice once.
To get the score he **multiplies** the numbers together.

(i) Work out the probability the score will be 2

....

(ii) Work out the probability the score will be more than 30

....

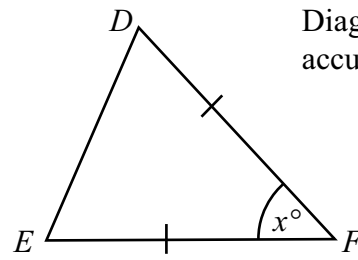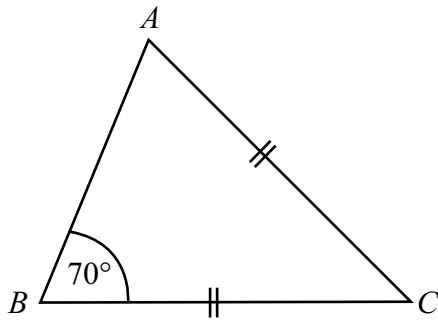**(Total for Question 19 is 5 marks)**

*20

Diagram **NOT** accurately drawn

Triangle *ABC* is an isosceles triangle.
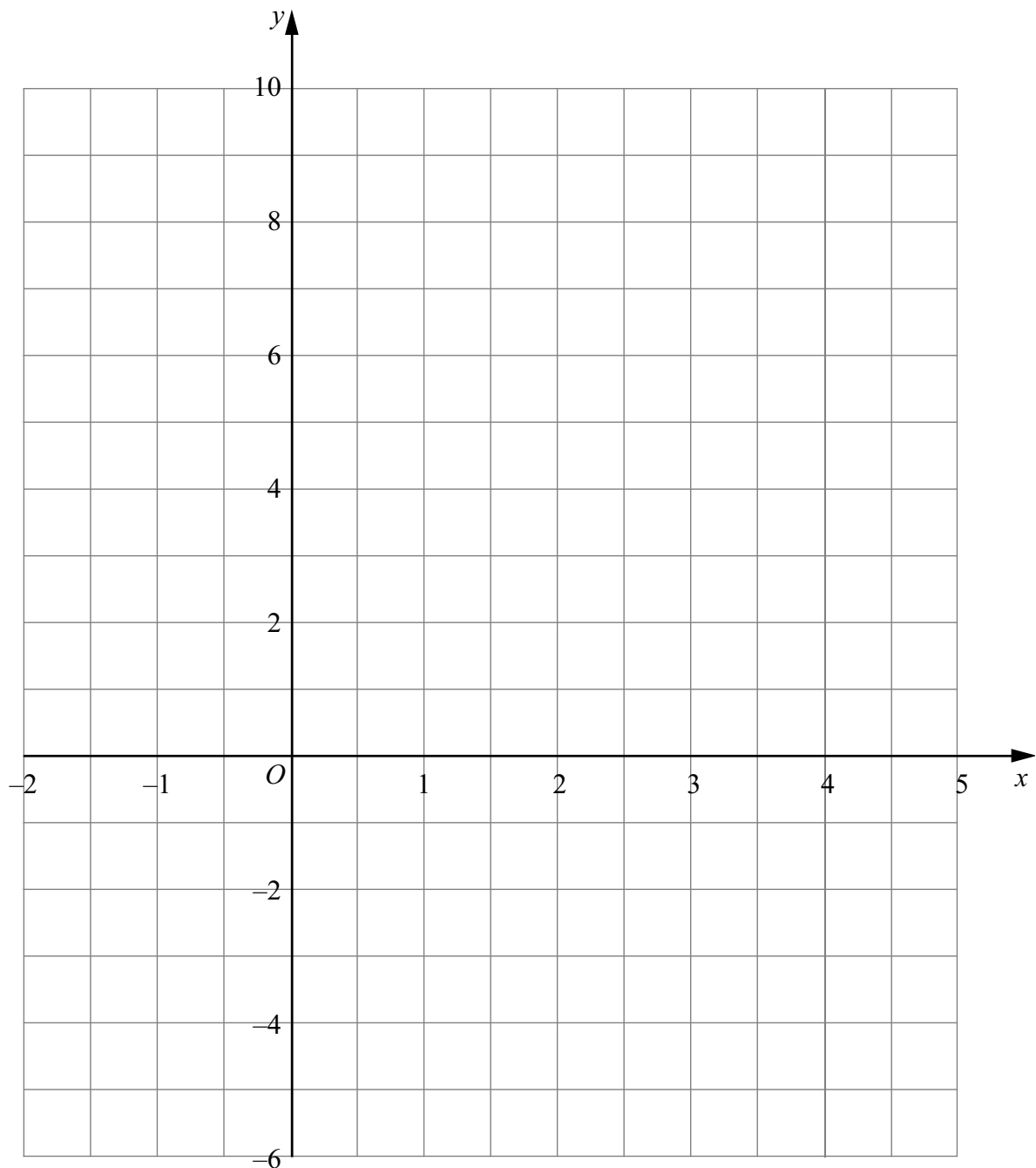Angle *B* = 70°.
AC = *BC*.

Triangle *ABC* is similar to triangle *DEF*.

Find the value of the angle marked *x*°.
Give reasons for your answer.

(Total for Question 20 is 4 marks)

21 On the grid draw the graph of $y = 2x - 3$

(Total for Question 21 is 3 marks)

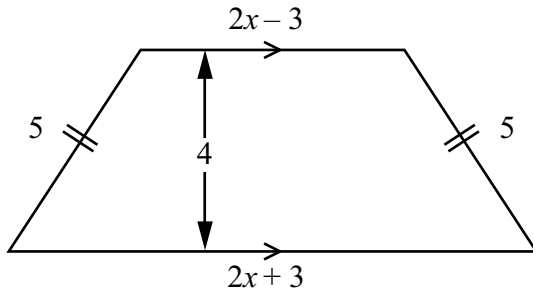**22** Here is a trapezium.

$2x - 3$

5 4 5

$2x + 3$

Diagram **NOT** accurately drawn

All the measurements are in cm.

The area of the trapezium is 18 cm².

Calculate the numerical value of the perimeter of the trapezium.

.... cm

(Total for Question 22 is 6 marks)

23 Here is some information about a cricket and tennis club.

80 people belong to the club.
35 play cricket.
50 play tennis.
15 play both cricket and tennis.

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

(4)

One of the people that belongs to the club is chosen at random.

(b) Work out the probability that this person does not play cricket or tennis.

....

(2)

(Total for Question 23 is 6 marks)

TOTAL FOR PAPER IS 100 MARKS

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