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

Tuesday 19 June 2012 – Afternoon
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 ▶

P41210A

6/6/7/

P 4 1 2 1 0 A 0 1 2 8

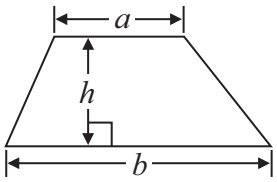
PEARSON

GCSE Mathematics 2MM01

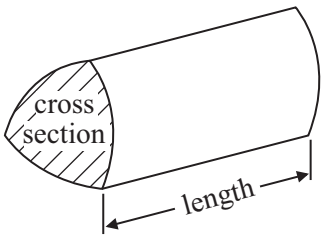
Formulae: Foundation Tier

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 nine thousand and eighty one** in figures.

.....

(1)

(b) Write the number 8305 in words.

.....

(1)

(c) Work out 630 – 72

.....

(1)

(d) Work out 29 × 1000

.....

(1)

(e) Work out 400 ÷ 50

.....

(1)

(Total for Question 1 is 5 marks)

2 Draw a circle around the word that best describes the following possibilities.

(i) You throw a fair coin and get tails.

Impossible	Unlikely	Even	Likely	Certain

(ii) There are three red counters and five blue counters in a bag.
You take a yellow counter from the bag.

Impossible	Unlikely	Even	Likely	Certain

(Total for Question 2 is 2 marks)

3 (a) Write the number 36.82 to the nearest whole number.

.....

(1)

(b) Write the number 547 to the nearest hundred.

.....

(1)

(c) Write the number 6.934 correct to 2 decimal places.

.....

(1)

(Total for Question 3 is 3 marks)

4 (a) Simplify $x + 2x + 3x$

.....

(1)

(b) Simplify $y \times y \times y$

.....

(1)

(c) Simplify fully $6f - 2g + f - 3g$

.....

(2)

(Total for Question 4 is 4 marks)

---

5 Here is a list of numbers.

6 8 10 18 20 25 48 50

From the numbers in the list, write down

(i) a square number

.....

(ii) a cube number

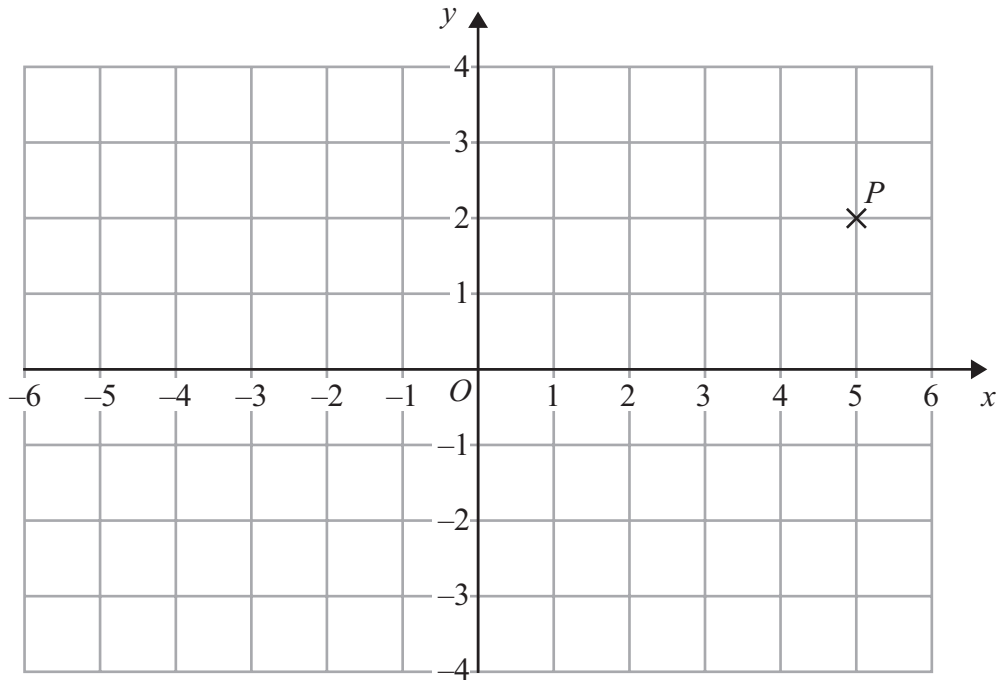
.....

(iii) an estimate for $\sqrt{96}$

.....

(Total for Question 5 is 3 marks)

6



(a) Write down the coordinates of the point P.

(..... , ...)

(1)

Q has coordinates $(-3, -2)$.

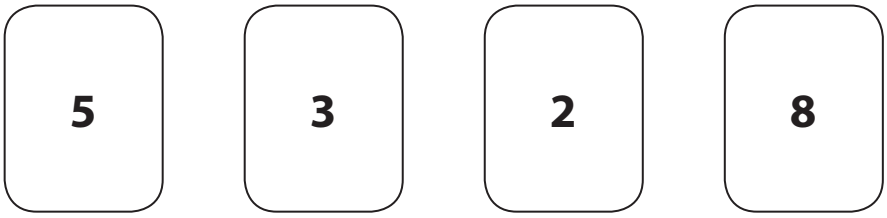
(b) Write down the coordinates of the midpoint of the line PQ.

(..... , ...)

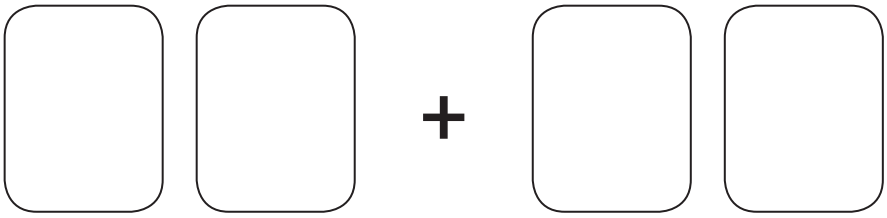
(2)

(Total for Question 6 is 3 marks)

7 Here are four number cards.



(i) Use each card once only to make the smallest total for the calculation below.



(ii) Work out the answer to this calculation.

.....

(Total for Question 7 is 2 marks)

8 Here is a triangle.

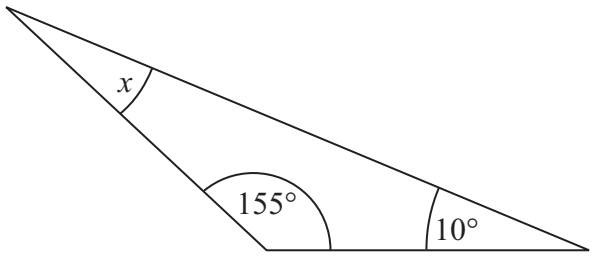


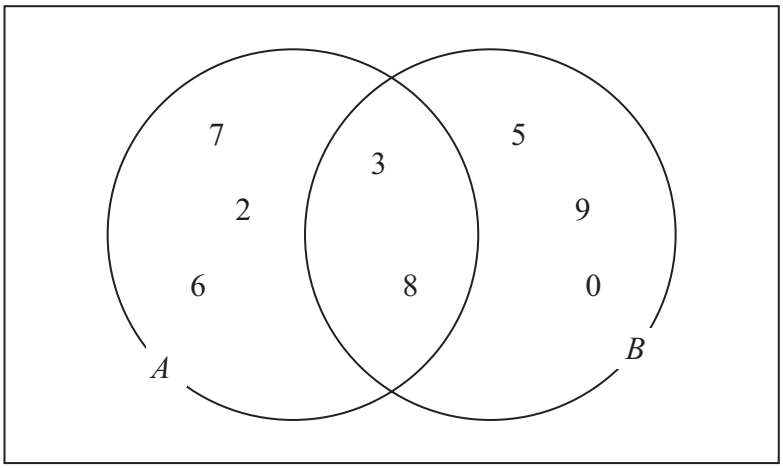
Diagram **NOT** accurately drawn

Work out the size of the angle marked x.

..... °

(Total for Question 8 is 2 marks)

9 Here is a Venn diagram.



(a) Write down all the numbers in set A.

.....

(2)

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

.....

(1)

(Total for Question 9 is 3 marks)

10 (a) Solve $6x = 18$

$x =$ .....

(1)

(b) Solve $f + 3 = 8$

$f =$ .....

(1)

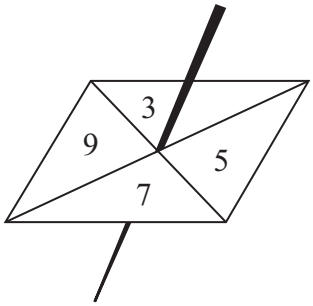
(c) Solve $6c - 7 = 2$

$c =$ .....

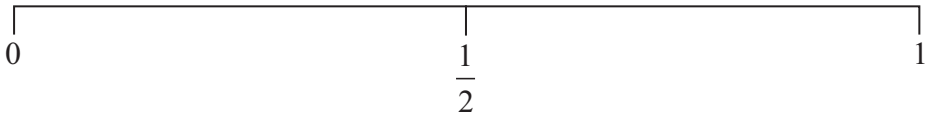
(2)

(Total for Question 10 is 4 marks)

11 Ed spins a fair 4-sided spinner once.
The spinner can land on 3 or on 5 or on 7 or on 9

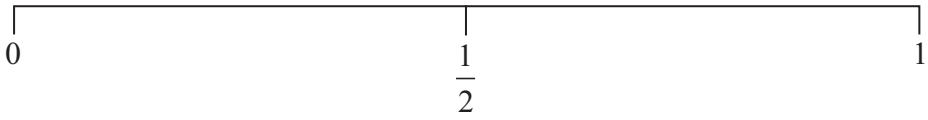


(a) On the probability scale below mark, with a cross (×), the probability that the spinner will land on an odd number.



(1)

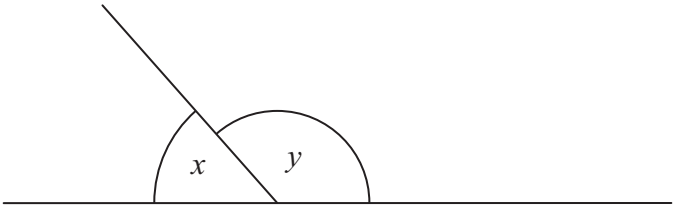
(b) On the probability scale below mark, with a cross (×), the probability that the spinner will land on 3



(1)

(Total for Question 11 is 2 marks)

12



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

.....

(ii) Write down the mathematical name for the type of angle marked y.

.....

(2)

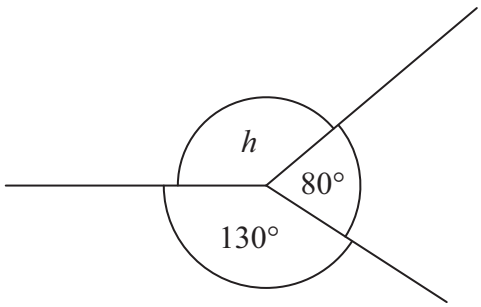


Diagram **NOT** accurately drawn

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

.....°

(ii) Give a reason for your answer.

.....

.....

(2)

(Total for Question 12 is 4 marks)

13 Matt thinks of two numbers.

Matt adds the two numbers and gets 20
One number is 4 more than the other number.

(a) Find the two numbers.

..... and .....

(1)

(b) Find **two** different factors of 24 that add together to make 12

..... and .....

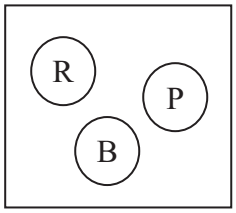
(2)

(Total for Question 13 is 3 marks)

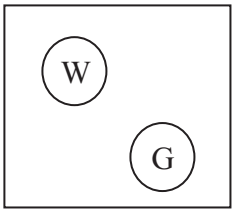
14 There are three counters in Box **X**.
One counter is red, one counter is blue and one counter is pink.

There are two counters in Box **Y**.
One counter is white and one counter is green.

Box **X**



Box **Y**



Erin takes at random a counter from Box **X** and then a counter from Box **Y**.

List all the possible outcomes she can get.

.....

.....

(Total for Question 14 is 2 marks)

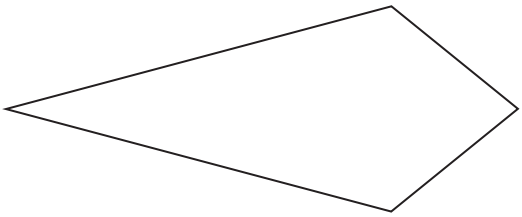
15 Here is a parallelogram.

(a) Write down the order of rotational symmetry of this parallelogram.

.....

(1)

(b) Draw the line of symmetry on this kite.



(1)

(Total for Question 15 is 2 marks)

16 (a) Work out $20 \div 5 + 5$

.....

(1)

(b) Work out $6 + 3 \times 2$

.....

(1)

(c) Add brackets ( ) to make this statement correct.

$$10 - 2 \times 3 + 1 = 2$$

(1)

(d) Work out $-3 + -2$

.....

(1)

(e) Work out $20 - -5$

.....

(1)

(Total for Question 16 is 5 marks)

17 $c = 8$

(a) Work out the value of $11 - c$.

.....

(1)

$r = 5(p + q)$

$p = 2$
$q = -6$

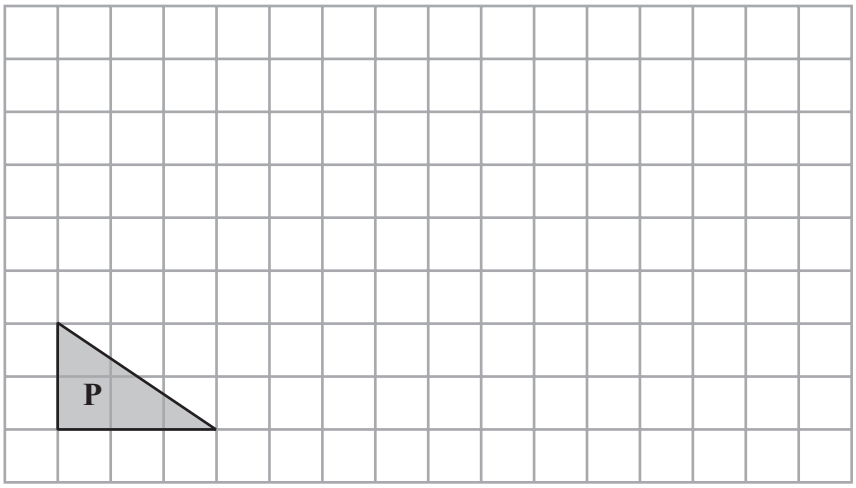
(b) Work out the value of r.

.....

(2)

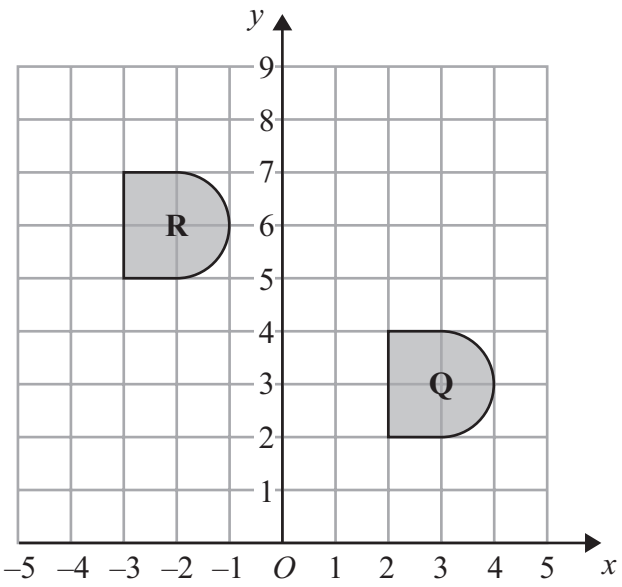
(Total for Question 17 is 3 marks)

18



(a) On the grid, draw an enlargement of triangle **P** with scale factor 3

(2)



(b) Describe fully the single transformation that maps shape **Q** onto shape **R**.

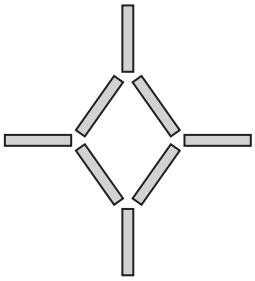
.....

.....

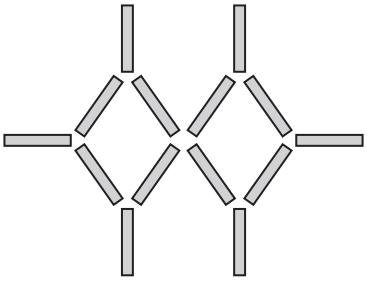
(2)

(Total for Question 18 is 4 marks)

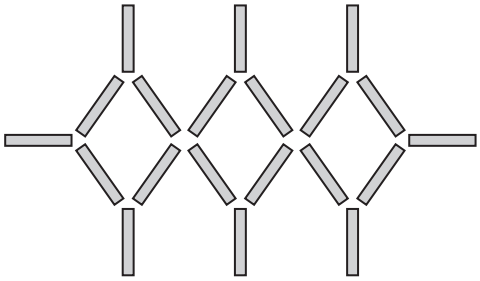
19 Here are some patterns made from sticks.



Pattern number 1

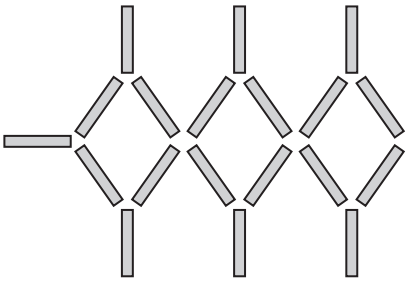


Pattern number 2



Pattern number 3

(a) In the space below, complete Pattern number 4



Pattern number 4

(1)

(b) Complete the table.

Pattern number	1	2	3	4	5
Number of sticks	8	14	20		

(1)

(c) Which Pattern number uses 122 sticks?

.....

(2)

(Total for Question 19 is 4 marks)

20 (a) Write $\frac{24}{36}$ in its simplest form.

.....

(1)

(b) Work out $\frac{1}{5} \times \frac{3}{7}$

.....

(1)

(c) Work out $\frac{1}{6} + \frac{2}{3}$

.....

(2)

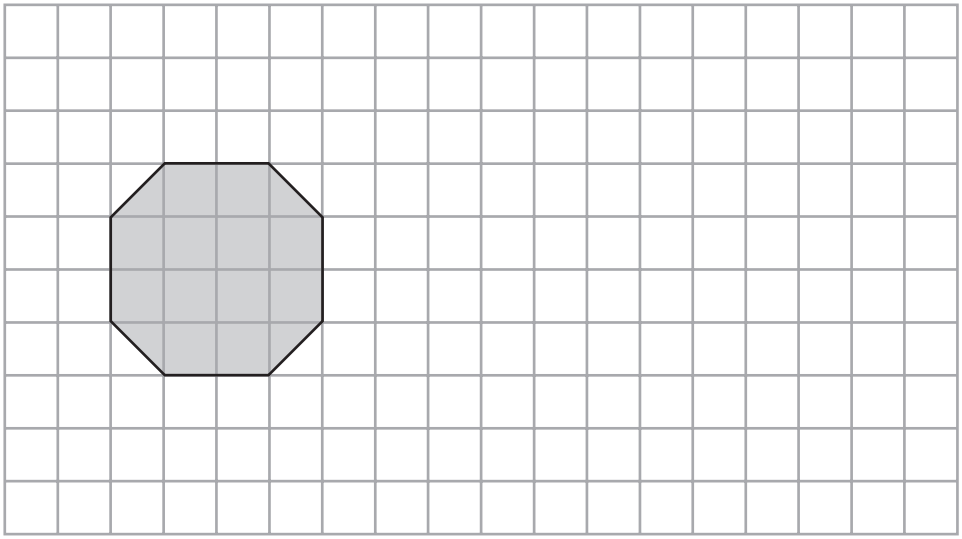
(d) Work out 15.3×6

.....

(2)

(Total for Question 20 is 6 marks)

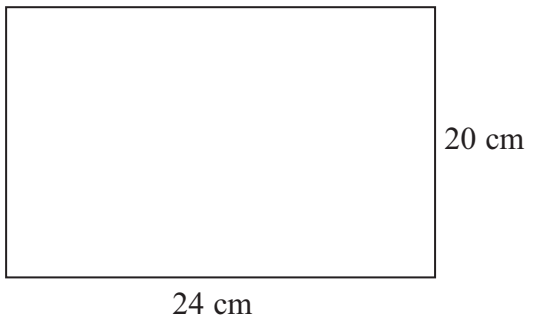
21



On the grid, draw a rectangle that has the same area as the shaded shape.

(Total for Question 21 is 2 marks)

22 Here are two rectangles.



Diagrams **NOT** accurately drawn

The large rectangle is 24 cm by 20 cm.
The small rectangle is 3 cm by 5 cm.

Work out the number of small rectangles needed to make the large rectangle.
You must show all your working.

.....

(Total for Question 22 is 3 marks)

23 There are 300 beads in a box.

The beads are red or yellow or black or white or green.

The table shows each of the probabilities that a bead taken at random from the box will be red or yellow or white or green.

Colour	**Red**	**Yellow**	**Black**	**White**	**Green**
Probability	0.35	0.15		0.18	0.12

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

(a) Work out the probability that the bead will be black.

.....

(2)

There are 300 beads in the box.

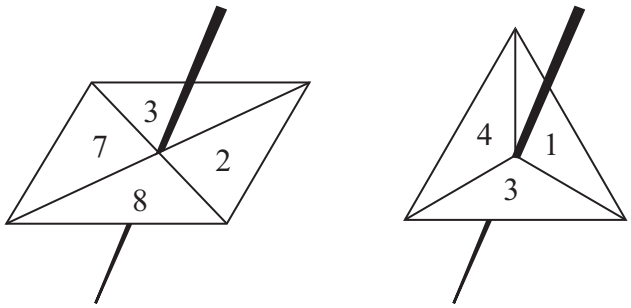
(b) Work out the number of red beads in the box.

.....

(2)

(Total for Question 23 is 4 marks)

24 Here are two fair spinners.



Mylene spins each spinner once.
Each spinner lands on a number.

Mylene adds these two numbers together to get the total score.

(i) Work out the probability that the total score will be 6

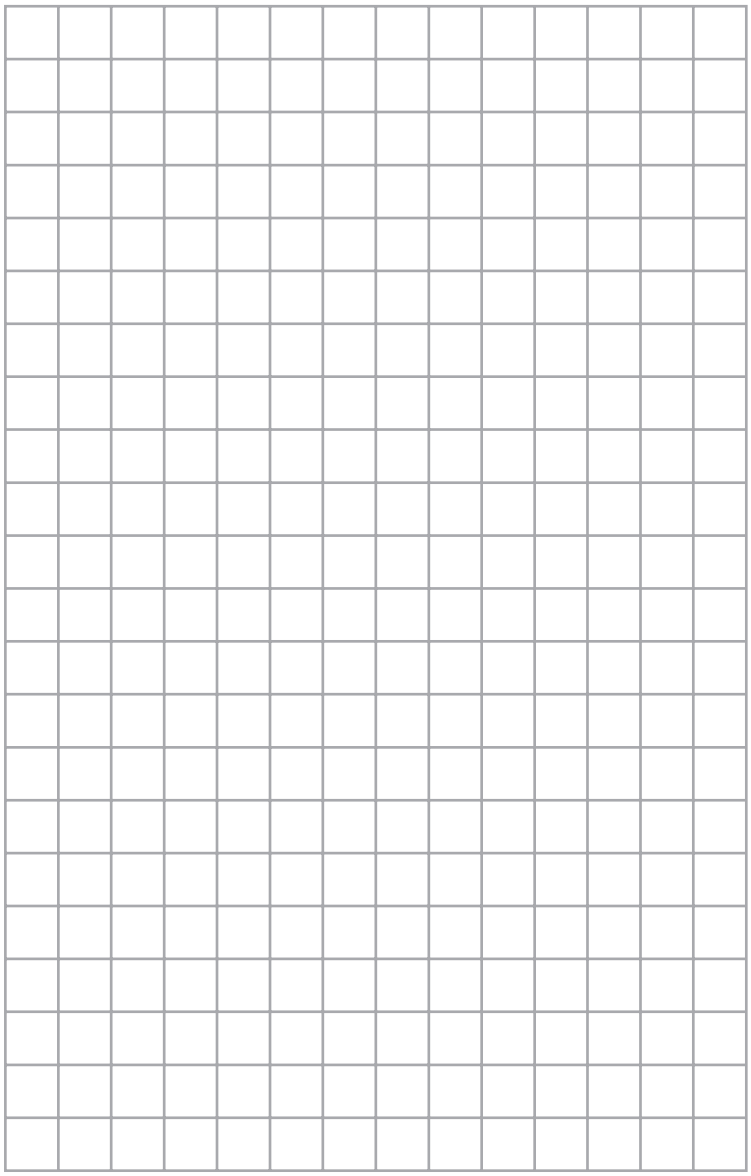
.....

(ii) Work out the probability that the total score will be more than 9

.....

(Total for Question 24 is 5 marks)

25 On the grid, draw the graph of $y = 5x + 2$ for values of x from -2 to 2



(Total for Question 25 is 4 marks)

***26**

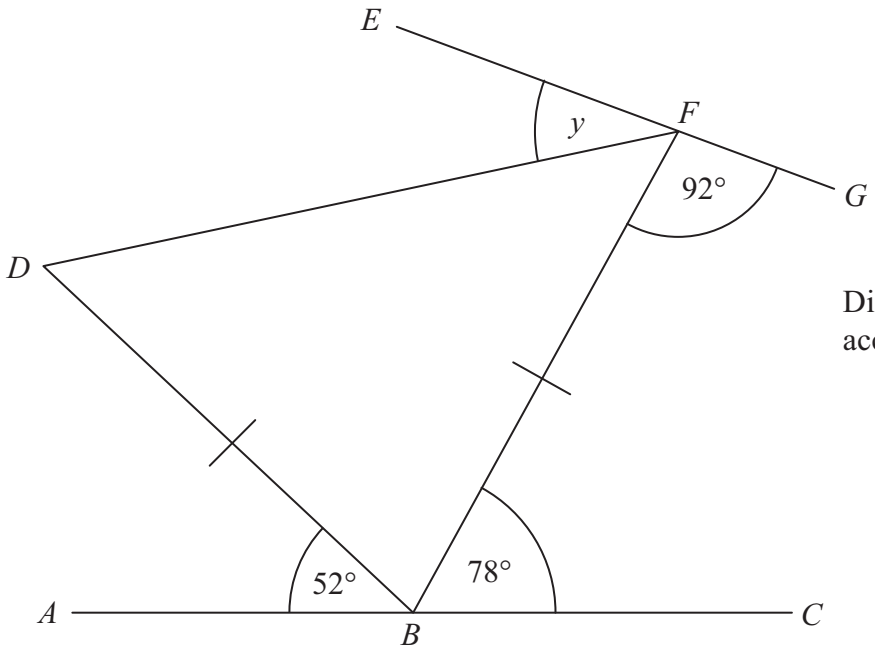


Diagram **NOT** accurately drawn

ABC and *EFG* are straight lines.
BDF is a triangle.
BD = *BF*.

Work out the size of the angle marked *y*.
Give reasons for your answer.

(Total for Question 26 is 5 marks)

***27**

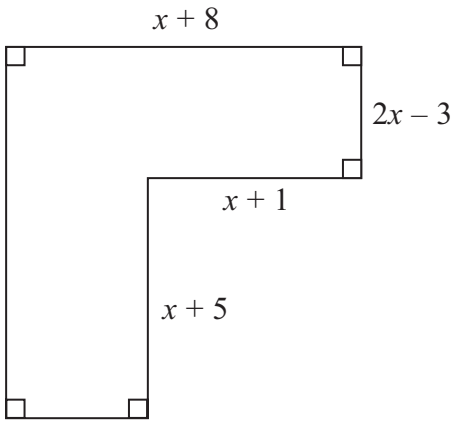


Diagram **NOT** accurately drawn

All the measurements are in centimetres.

The perimeter of this shape is 68 cm.

Use algebra to work out the value of x.
You must show all your working.

(Total for Question 27 is 5 marks)

28 The lights and brakes of 50 cars were tested.

10 of the cars failed the lights test.
4 of the cars failed both the lights test and the brakes test.
32 of the cars passed both the lights test and the brakes test.

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

(4)

One of the 50 cars is chosen at random.

(b) Work out the probability that this car failed the brakes test.

.....

(2)

(Total for Question 28 is 6 marks)

TOTAL FOR PAPER IS 100 MARKS

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