Mathematics

Unit T5 Paper 1
(Non-calculator)
Foundation Tier

[GMT51]
FRIDAY 2 JUNE, 9.15am–10.15am

GMT51

TIME

1 hour.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.
You must answer the questions in the spaces provided.
Do not write outside the boxed area on each page, on blank pages or tracing paper.
Complete in black ink only. **Do not write with a gel pen.**
Answer **all sixteen** questions.
All working should be clearly shown in the spaces provided since marks may be awarded for partially correct solutions.
You **must not** use a calculator for this paper.

INFORMATION FOR CANDIDATES

The total mark for this paper is 50.
Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.
Functional Elements will be assessed in this paper.
Quality of written communication will be assessed in Question **2**.
You should have a ruler, compasses and a protractor.
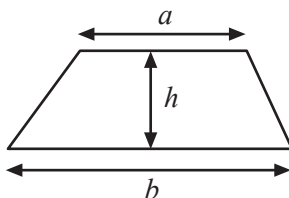The Formula Sheet is on page 2.

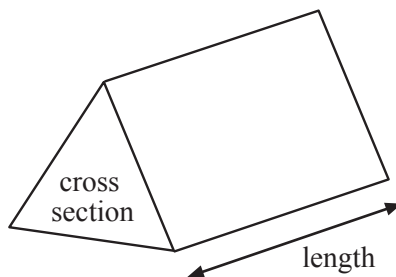# Formula Sheet

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

Volume of prism = area of cross section × length

1 (a) Estimate the total weight of 69 pies weighing 102 g each.

Answer _____ g [1]

(b) Estimate the greatest number of pencils costing 39p each that can be bought with £20

Answer _____ [2]

Quality of written communication will be assessed in this question.

2 Gareth borrows £300 He pays back £300 plus 25%

Jemma borrows £300 She pays back £55 each month for five months and one final payment of £110

Who pays more and how much more?

Answer _____ pays £ _____ more [5]

[Turn over

3 From a list of all the people living in Northern Ireland, one is taken at random.

Impossible   Very Unlikely   Unlikely   Evens   Likely   Very Likely   Certain

From the list of words given, write the most appropriate to describe the chance of the person

(a) having a birthday in summer,

Answer _____ [1]

(b) being more than 140 years old,

Answer _____ [1]

(c) being you (give a reason for your answer).

Answer _____ because _____ [1]

4

Shape	Square	Rhombus	Parallelogram	Rectangle
Number of lines of symmetry	4	4	2	2
Order of rotational symmetry	4	2	2	4

There are some mistakes in the table above. Circle each wrong number and write the correct number beside it. [3]

5 Which imperial unit would be used to measure

    (a) a depth of several metres,

                              Answer _____ [1]

    (b) a volume of twenty litres,

                              Answer _____ [1]

    (c) a length of a few centimetres?

                              Answer _____ [1]

6 Calculate

    (a) $3 + 2 \times 10$

                              Answer _____ [1]

    (b) $12 - 4 \div 2$

                              Answer _____ [1]

[Turn over

7

x	A	7	4	=	+	–

Use any of the letters, numbers and symbols above to write

(a) an equation,

Answer _____ [1]

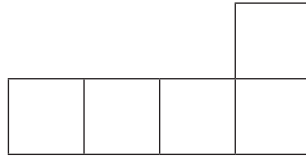**(b)** an expression,

Answer _____ [1]

(c) a formula.

Answer _____ [1]

8 **(a)**

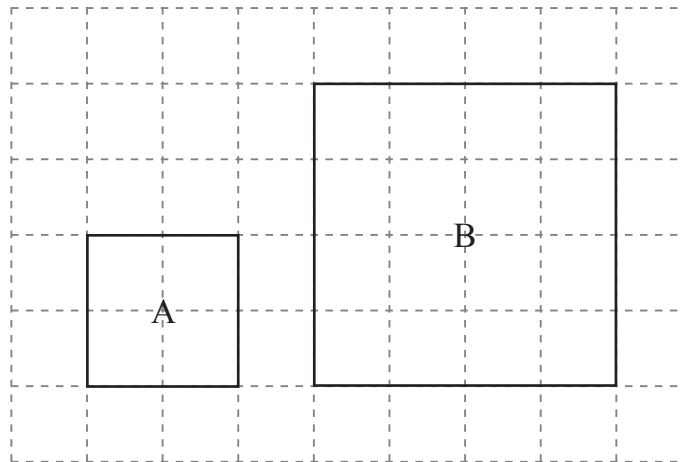Add one square so that the new shape has one line of symmetry. [1]

(b)

Add one square so that the new shape has rotational symmetry of order 2 [1]

(c)

Shape A is enlarged to give shape B.

What is the scale factor of the enlargement?
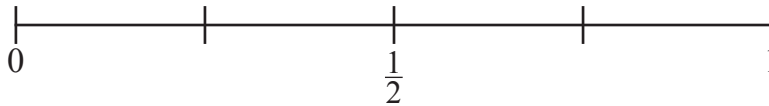
Answer _____ [1]

[Turn over

9 **(a)** A probability scale goes from 0 to 1

What does the number 1 tell you about the chance of an event happening?

_____ [1]

(b) Mark with an arrow and the letter P, the probability of having a birthday on 32nd January.

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├───────┼───────┼───────┼───────┤
0               1               1
                2
```
[1]

(c) 300 tickets are sold in a school raffle.

Only boys and girls buy tickets.

Explain why the probability of a boy winning may not be $\frac{1}{2}$

[1]

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10 (a) Jill is playing a game of "Make it".

She must use the single digits 2, 3, 4 and 5, once each in any order.

She can use any of $+, -, \times, \div$, brackets.

She must make the answer 10

Show how this can be done.

Answer _____ [2]

(b) When $c = -5$ and $d = 4$

evaluate $c^2 - \sqrt{d}$

Answer _____ [2]

11 The table shows information about all pupils in a Year 12 class.

	Boys	Girls
Blue Eyes	4	6
Brown Eyes	10	8

(a) How many pupils are there in the class?

Answer _____ [1]

(b) A pupil is to be chosen at random.

What is the probability that the pupil will have blue eyes?

Answer _____ [1]

(c) A pupil was chosen. It was a boy.
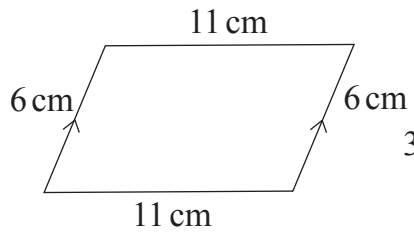
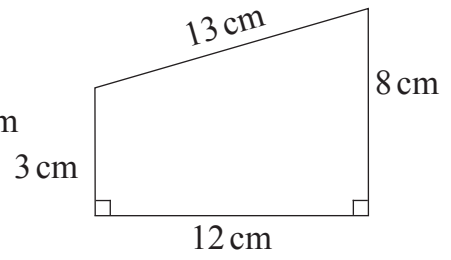What is the probability that he had brown eyes?

Answer _____ [2]

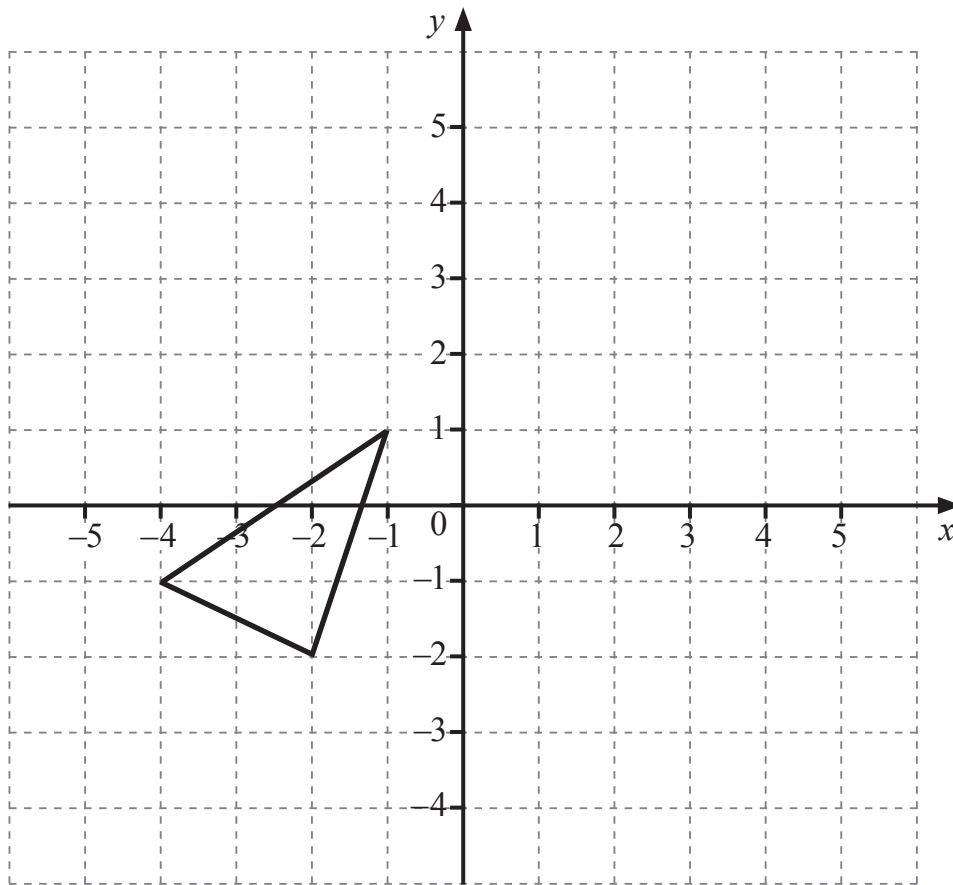**12** Explain why two of the shapes below have an area of 66 cm² while the other shape does not.

15 cm
4 cm
5 cm
18 cm
Shape A

11 cm
6 cm
6 cm
11 cm
Shape B

13 cm
8 cm
3 cm
12 cm
Shape C

[4]

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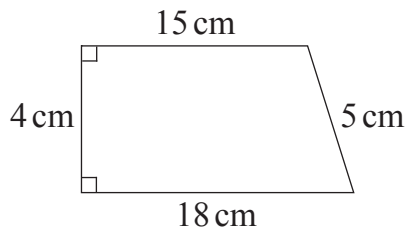
13

Draw the image of the triangle after a rotation of 90° anticlockwise about the point (–1, 3). [3]

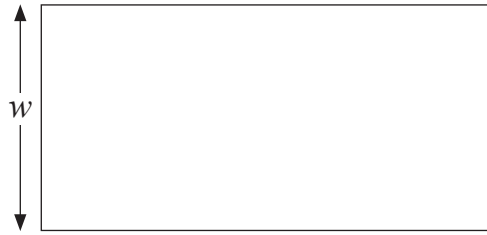**14** John and Mark share an amount of money in the ratio 5 : 6

Mark's share is £48

What was the total amount shared?

Answer £_____ [2]

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15 The length of a rectangle is 3 times its width.

The width is w cm.

(a) Write down a formula for the area A of the rectangle in terms of w.

Answer _____ [1]

(b) The area of the rectangle is 48 cm²

Calculate the width of the rectangle.

Answer _____ cm [2]

16 Complete the boxes

$$\frac{2xy}{3y} \times \frac{\boxed{}}{\boxed{}} = \frac{4xy^2}{9xy}$$

[2]

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