Rewarding Learning

Centre Number

Candidate Number

General Certificate of Secondary Education
Summer 2018

# Mathematics

Unit T5 Paper 1
**(Non-calculator)**
Foundation Tier

**[GMT51]**

*GMT51*

**THURSDAY 7 JUNE, 9.15am–10.15am**

**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. 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 **10**.
You should have a ruler, compasses and a protractor.
The Formula Sheet is on page 2.

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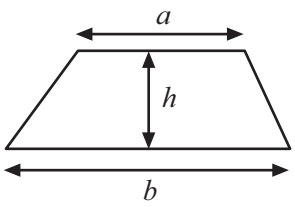
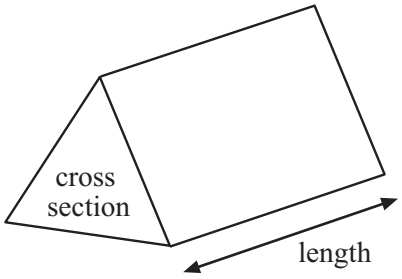
# Formula Sheet

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




**Volume of prism** = area of cross section × length

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**(Questions start overleaf)**

**1** **(a)** **Estimate** the total weight of 83 cars each weighing 1.85 tonnes.

Answer _____ tonnes [2]

**(b)** **Estimate** how many cycle helmets costing £5.85 each can be bought for £50

Answer _____ [2]

**2** THE MOBILE MAGICIAN

Hire me for your children's party

Cost for show £55

Plus £4 per child

Travel costs: 50p per mile

Hazel hires the mobile magician for her children's party.

There are 10 children.

The magician travels a distance of 20 miles.

How much will it cost Hazel?

Answer £ _____ [3]

**[Turn over**

**3**

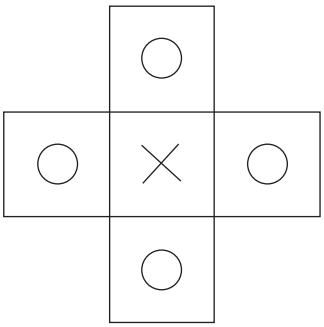
| A | B | C |
|---|---|---|
| $3 + x = 1$ | $3x + H + 11$ | $H = 3x + 11$ |

Which of A, B, C is

**(a)** an expression, Answer _____ [1]

**(b)** a formula? Answer _____ [1]

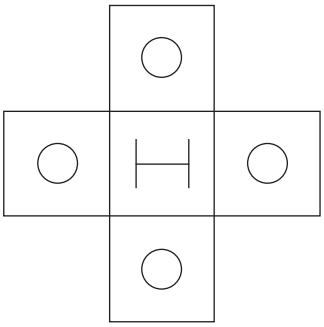
**4** Pattern 1



**(a)** How many lines of symmetry does Pattern 1 have? Answer _____ [1]

**(b)** What is the order of rotational symmetry of Pattern 1? Answer _____ [1]

Pattern 2



**(c)** How many lines of symmetry does Pattern 2 have? Answer _____ [1]

**(d)** If ⊢ is replaced by J in Pattern 2,
how many lines of symmetry will the new pattern have? Answer _____ [1]

**(e)** What letter could replace × or ⊢ in Patterns 1 and 2
to give exactly one line of symmetry?
Draw the letter accurately in the answer space. Answer _____ [1]

**[Turn over**

**5** **(a)** Write these measurements in order from shortest to longest.

2 feet  2 yards  2 inches  2 miles

Answer _____ , _____ , _____ , _____ [1]

**(b)** Write these measurements in order from lightest to heaviest.

3 tons  3 ounces  3 stone  3 pounds

Answer _____ , _____ , _____ , _____ [1]

**6** Keith says that $4 + 14 \div 2 = 9$

Eric says that $4 + 14 \div 2 = 11$

Who is right?

Show your working clearly.

Answer _____ because _____

_____ [2]

**7** Breena is ordering ice cream.

She must choose a flavour and how it is served.

She can order Honeycomb, Strawberry or Vanilla.

She can have it served in a Cone, a Wafer or a Tub.

**(a)** List all the possible choices she can make.

[2]

**(b)** What is the probability that Breena will choose Vanilla ice cream?

Answer _____ [1]

**8** **(a)** Estimate $\sqrt{3}$ Answer _____ [1]

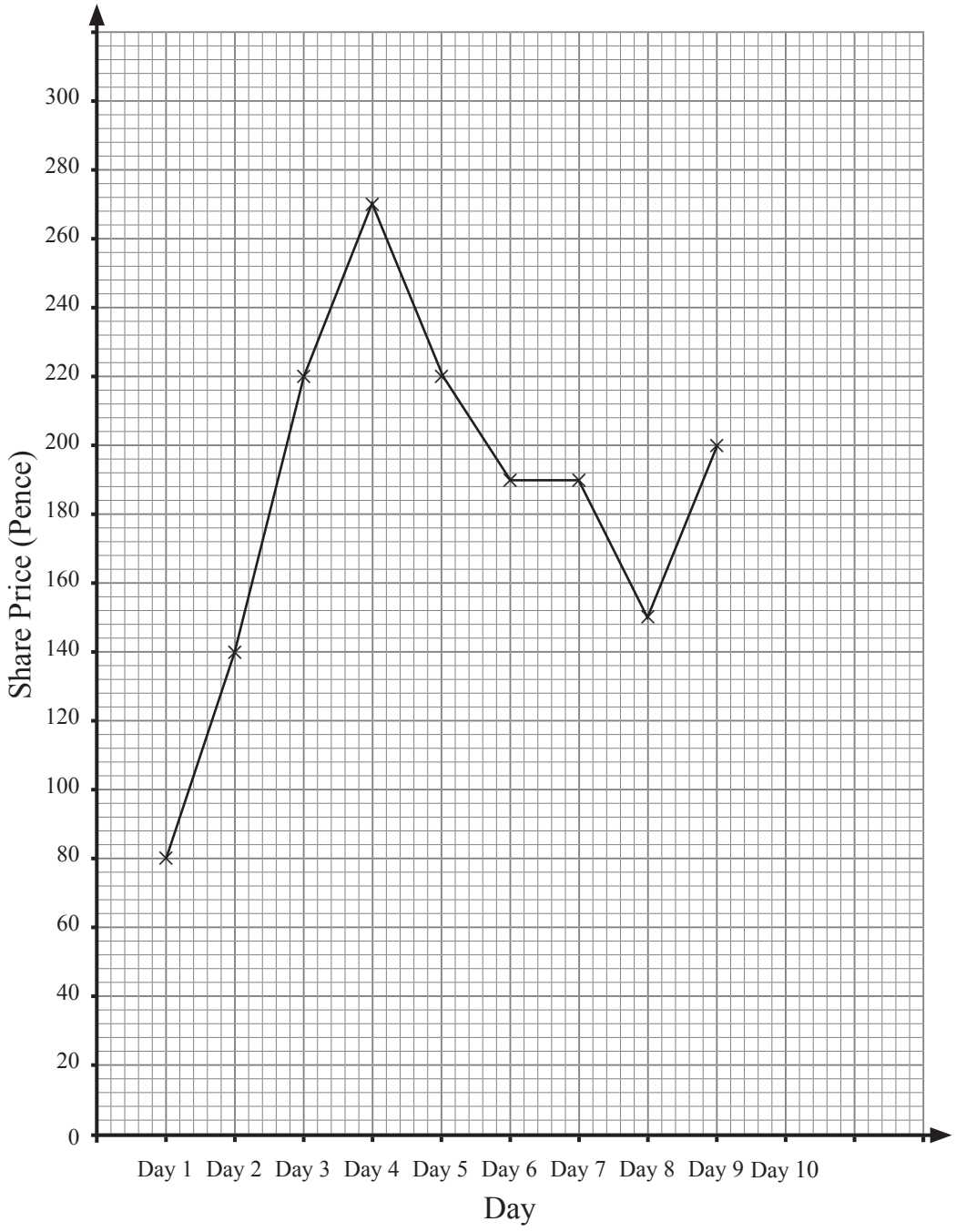
**(b)** Write 26.873 to 1 decimal place. Answer _____ [1]

**(c)** Write 19.897 to 2 decimal places. Answer _____ [1]

**[Turn over**

**9** Annette owns shares in a company.

She draws a graph to show the share price at the end of each day for 9 days.

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**(a)** What is the difference in £ between the Day 1 price and the Day 9 price?

Answer £ _____ [2]

**(b)** The share price on Day 10 is double the share price on Day 1

Plot on the graph the Day 10 price. [1]

**(c)** Annette had considered selling her shares.

On which of the 10 days should she have sold her shares? Explain your answer.

Answer Day ____ because _____

_____ [1]

**[Turn over**

**Quality of written communication will be assessed in this question.**

**10** Here are 3 different formulae for T:

Formula 1 $T = a + b$

Formula 2 $T = \frac{a}{b}$

Formula 3 $T = ab$

Which formula gives the largest value for T when $a = -6$ and $b = 2$?

**Show all your working clearly.**

Answer Formula _____ [3]

**11** $P = 3L + 2W$

Find the value of W when $P = 84$ and $L = 20$

Answer _____ [3]

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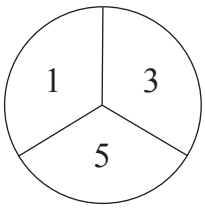
**(Questions continue overleaf)**

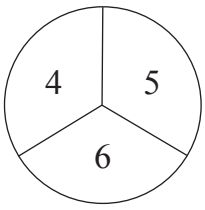
**[Turn over**

**12** Three friends play a game with two fair spinners.

The spinners are numbered 1, 3 and 5 and 4, 5 and 6




Spinner A




Spinner B

Each of the spinners is spun and the numbers are added together.

**(a)** Complete the table to show all the possible total scores.

Spinner B

| Spinner A + | 4 | 5 | 6 |
|---|---|---|---|
| 1 | | | |
| 3 | | | |
| 5 | | | |

[2]

**(b)** If the total is even, Niamh wins.

If the total is a 7 or 9, Sam wins.

If the total is a multiple of 3, Tom wins.

Who is the most likely to win? Explain your answer clearly.

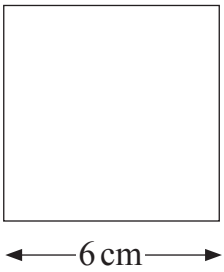
Answer _____ because _____

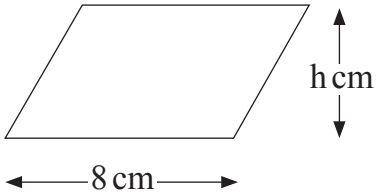
_____ [2]

**(c)** What is the probability that none of the friends win in a game?

Answer _____ [1]

**13**



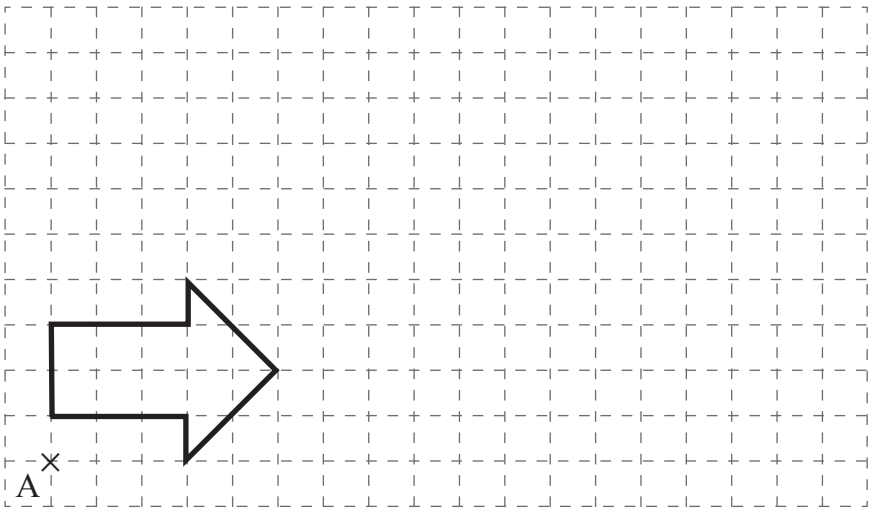

The area of the square is the same as the area of the parallelogram.

What is the value for h, the perpendicular height of the parallelogram?

Answer _____ cm [3]

**[Turn over**

**14** Enlarge this shape using a scale factor of 2 from the centre A.




[3]

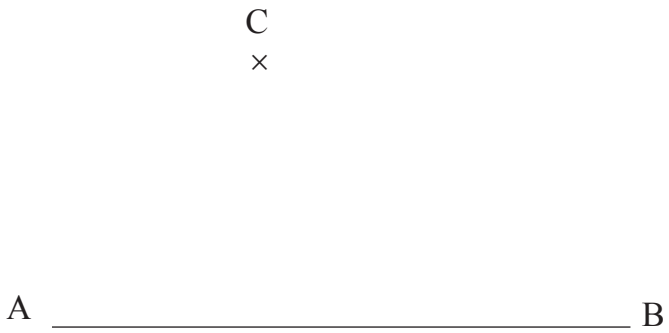
**15** Work out the missing value in each of the following.

**(a)** $t^4 \times t^3 = t^{\square}$ [1]

**(b)** $(p^3)^3 = p^{\square}$ [1]

**(c)** $\frac{y^{16}}{y^4} = y^{\square}$ [1]

**16** Using a ruler and compasses only, construct a line from the point C to cross the line AB at right angles. Leave in all your construction arcs.

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