



General Certificate of Secondary Education  
January 2018

Centre Number

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Candidate Number

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# Mathematics

Unit T5 Paper 2  
(With calculator)

Foundation Tier



[GMT52]

\*GMT52\*

**WEDNESDAY 10 JANUARY, 10.45am–11.45am**

## 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 fifteen** questions.

All working should be clearly shown in the spaces provided. Marks may be awarded for partially correct solutions.

You **may** 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 **15(c)**.

You should have a calculator, ruler, compasses and a protractor.

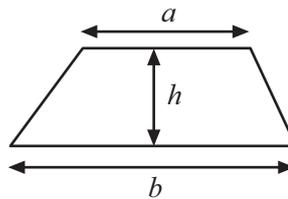
The Formula Sheet is on page 2.

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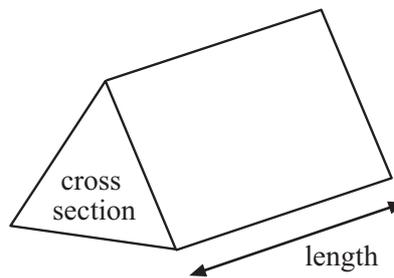


## Formula Sheet

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



$$\text{Volume of prism} = \text{area of cross section} \times \text{length}$$



1 A pizza cost £8 plus £1.50 for each extra topping.

Delivery costs £2

(a) Evie orders a pizza with three extra toppings to be delivered.

What is the total cost?

Answer £ \_\_\_\_\_ [2]

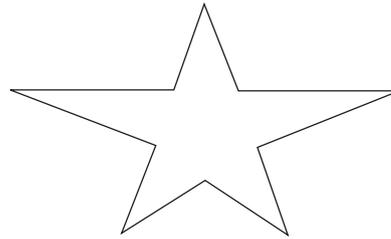
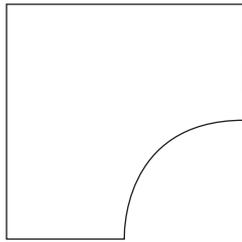
(b) Jenny collects her pizza and it costs £15.50

How many extra toppings does it have?

Answer \_\_\_\_\_ [2]

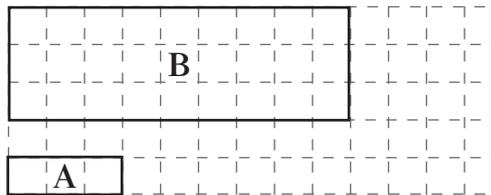


- 2 (a) Draw the line of symmetry in each shape below.



[2]

- (b)



**B** is an enlargement of **A**.

What is the scale factor of the enlargement?

Answer \_\_\_\_\_ [1]

- 3 One month of the year is randomly chosen.

Use a **word** to describe the chance of each event below happening.

(a) The month is May. Answer \_\_\_\_\_ [1]

(b) The last letter of the month is Y or R. Answer \_\_\_\_\_ [1]

(c) The month has 32 days. Answer \_\_\_\_\_ [1]



4

A  $3x = 11$

B  $Q = \pi r + d$

C  $3x^2 + 11$

D  $x + 11 < 20$

Which of the above, A, B, C or D, is

(a) a formula, Answer \_\_\_\_\_ [1]

(b) an expression, Answer \_\_\_\_\_ [1]

(c) an equation? Answer \_\_\_\_\_ [1]

5 A coin is tossed to give Heads or Tails.

A spinner is spun to land on Red, Black, Yellow or White.

List all the possible outcomes.

[2]

[Turn over]

11061



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6 Dan is decorating his bedroom.

He buys the following materials.

Complete his bill.

<b>Materials</b>	<b>Cost</b>
12 rolls of wallpaper @ £8.70 per roll	£ _____
3 packets of paste @ £3.25 per packet	£ _____
1 brush @ £7.25	£ <u>7.25</u>
1 pasting table @ £15.00	£ <u>15.00</u>
	Sub-total £ _____
	VAT @ 20% £ _____
	Total £ _____

[5]



7 (a) Calculate the value of  $\frac{2a-b}{c}$  when  $a = 5$ ,  $b = 3$  and  $c = 2$

Answer \_\_\_\_\_ [2]

(b) Make  $y$  the subject of the formula  $3y = P$

Answer \_\_\_\_\_ [1]

(c) Make  $b$  the subject of the formula  $T = 2a + b$

Answer \_\_\_\_\_ [1]

8 Complete the table.

QUADRILATERAL	Number of lines of symmetry	Order of rotational symmetry
_____	4	
KITE		
PARALLELOGRAM		

[6]

[Turn over



9 Suncream in the UK costs £6.80

The same suncream in the USA costs \$8.40

The exchange rate is £1 = \$1.35

Where is it cheaper to buy the suncream and by how much?

Answer \_\_\_\_\_ by \_\_\_\_\_ [2]

10 Work out each calculation and the **difference** in value between these two calculations.

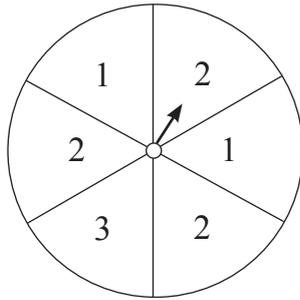
(i)  $\frac{18.72}{8 + 7.6}$

(ii)  $\frac{18.72}{8} + 7.6$

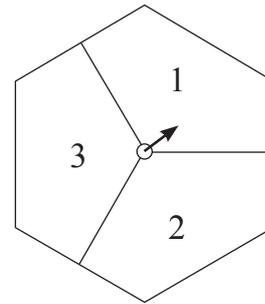
Answer (i) \_\_\_\_\_ [1] Answer (ii) \_\_\_\_\_ [1] Difference is \_\_\_\_\_ [1]



11



Spinner A



Spinner B

Each spinner is spun once.

For each statement **circle** true or false.

- |  |      |       |     |
|--|------|-------|-----|
| (a) Getting a 1 is more likely on A than on B. | True | False | [1] |
| (b) Getting a 2 is more likely on A than on B. | True | False | [1] |
| (c) Getting a 3 is equally likely on A and B.  | True | False | [1] |



12

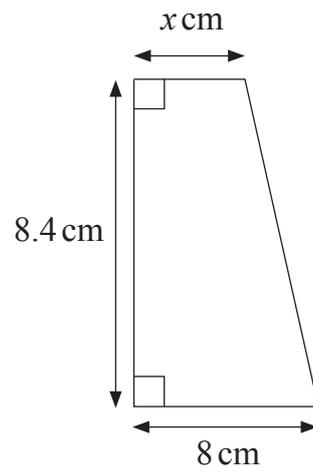


diagram  
not drawn  
accurately

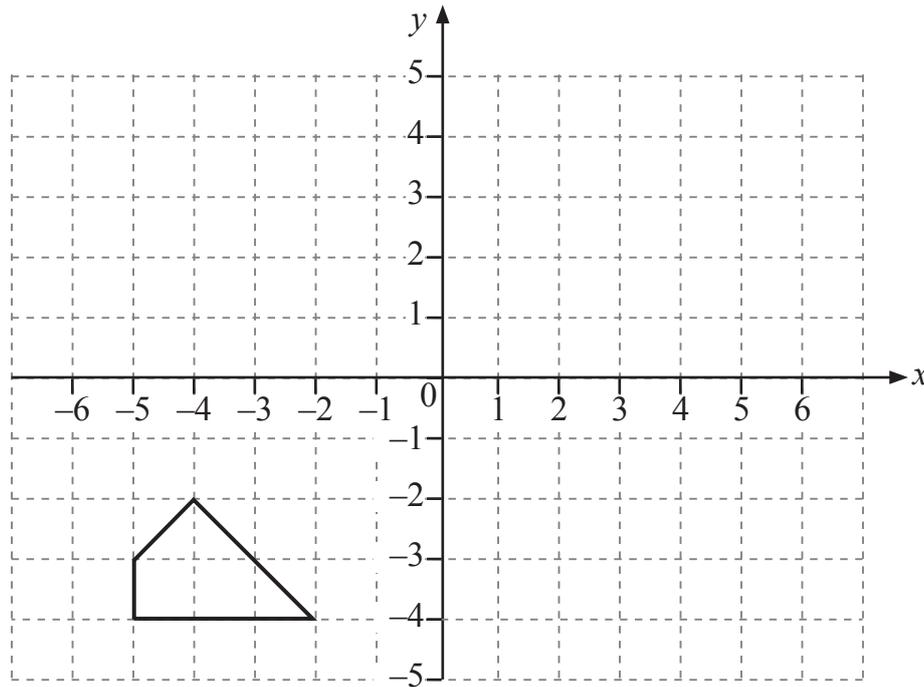
The area of this trapezium is  $50.4 \text{ cm}^2$

What is the value of  $x$ ?

Answer \_\_\_\_\_ [3]



13 Rotate the shape 90° clockwise about the point (0, -2).



[2]

14 The prize money for a race is £255 000

The top 3 finishers in the race share the prize money in the ratio 10 : 5 : 2

How much do they each get?

Answer 1st Prize £ \_\_\_\_\_ 2nd Prize £ \_\_\_\_\_ 3rd Prize £ \_\_\_\_\_ [3]

[Turn over



15 Shea throws a dice 200 times.

He records the number of times he gets a 5 after 40, 80, 120, 160 and 200 throws.

He then calculates the relative frequency.

Number of throws	40	80	120	160	200
Number of 5s	13	26		40	46
Relative frequency	0.325	0.325	0.3	0.25	

(a) Calculate the missing values in the table. [2]

(b) What is the best estimate of the probability of getting a 5 on this dice?

Answer \_\_\_\_\_ [1]

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

(c) Do you think the dice is biased? Explain your answer clearly.

Answer \_\_\_\_\_ because \_\_\_\_\_

\_\_\_\_\_ [1]

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**THIS IS THE END OF THE QUESTION PAPER**

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For Examiner's use only	
Question Number	Marks
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<b>Total Marks</b>	
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Examiner Number

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11061/3



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