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Rewarding Learning

Centre Number

Candidate Number

General Certificate of Secondary Education
January 2018

Mathematics

Unit T5 Paper 2
(With calculator)
Foundation Tier

MV18

[GMT52]

WEDNESDAY 10 JANUARY, 10.45am–11.45am

Time

1 hour, plus your additional time allowance.

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 on blank pages or tracing paper.
Complete in black ink only.
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.

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Information for Candidates

The total mark for this paper is 50.
Figures in brackets printed at the end of each question 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 3.

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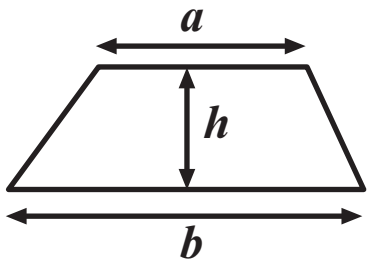
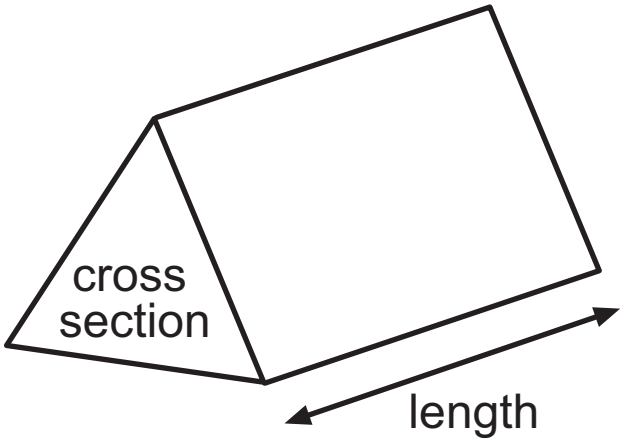
Formula Sheet

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



Volume of prism = area of cross section × length



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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? [2 marks]

Answer **£** _____

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

How many extra toppings does it have? [2 marks]

Answer _____

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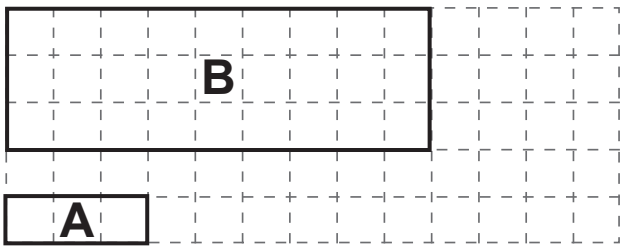
2 **(a)** Draw the line of symmetry in each shape below.
[2 marks]

(b)



B is an enlargement of **A**.

What is the scale factor of the enlargement? [1 mark]

Answer _____

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. [1 mark]

Answer _____

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

Answer _____

(c) The month has 32 days. [1 mark]

Answer _____

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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, [1 mark]

Answer _____

(b) an expression, [1 mark]

Answer _____

(c) an equation? [1 mark]

Answer _____

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 marks]

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6 Dan is decorating his bedroom.

He buys the following materials.

Complete his bill. [5 marks]

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

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7 **(a)** Calculate the value of $\frac{2a - b}{c}$

when $a = 5$, $b = 3$ and $c = 2$ [2 marks]

Answer _____

(b) Make y the subject of the formula $3y = P$ [1 mark]

Answer _____

(c) Make b the subject of the formula $T = 2a + b$ [1 mark]

Answer _____

8 Complete the table. [6 marks]

Quadrilateral	**Number of lines of symmetry**	**Order of rotational symmetry**
	4	
Kite		
Parallelogram		

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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? [2 marks]

Answer _____ by _____

10 Work out each calculation and the **difference** in value between these two calculations. [1 mark for each calculation and 1 mark for the difference]

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

Answer **(i)** _____ Answer **(ii)** _____

Difference is _____

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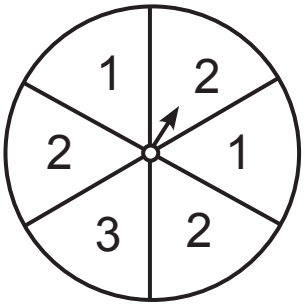
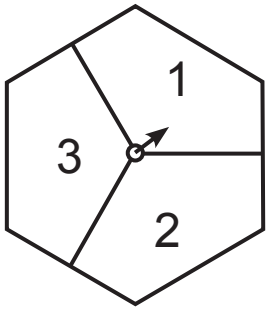
11



Spinner A



Spinner B

Each spinner is spun once.

For each statement **circle** true or false. [1 mark for each]

(a) Getting a 1 is more likely on A than on B.

True False

(b) Getting a 2 is more likely on A than on B.

True False

(c) Getting a 3 is equally likely on A and B.

True False

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12

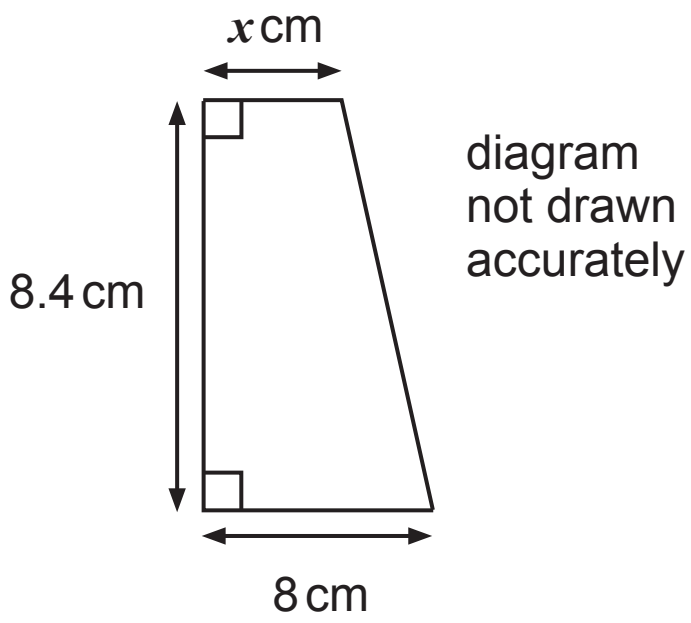

diagram not drawn accurately

The area of this trapezium is 50.4 cm^2

What is the value of x? [3 marks]

Answer _____

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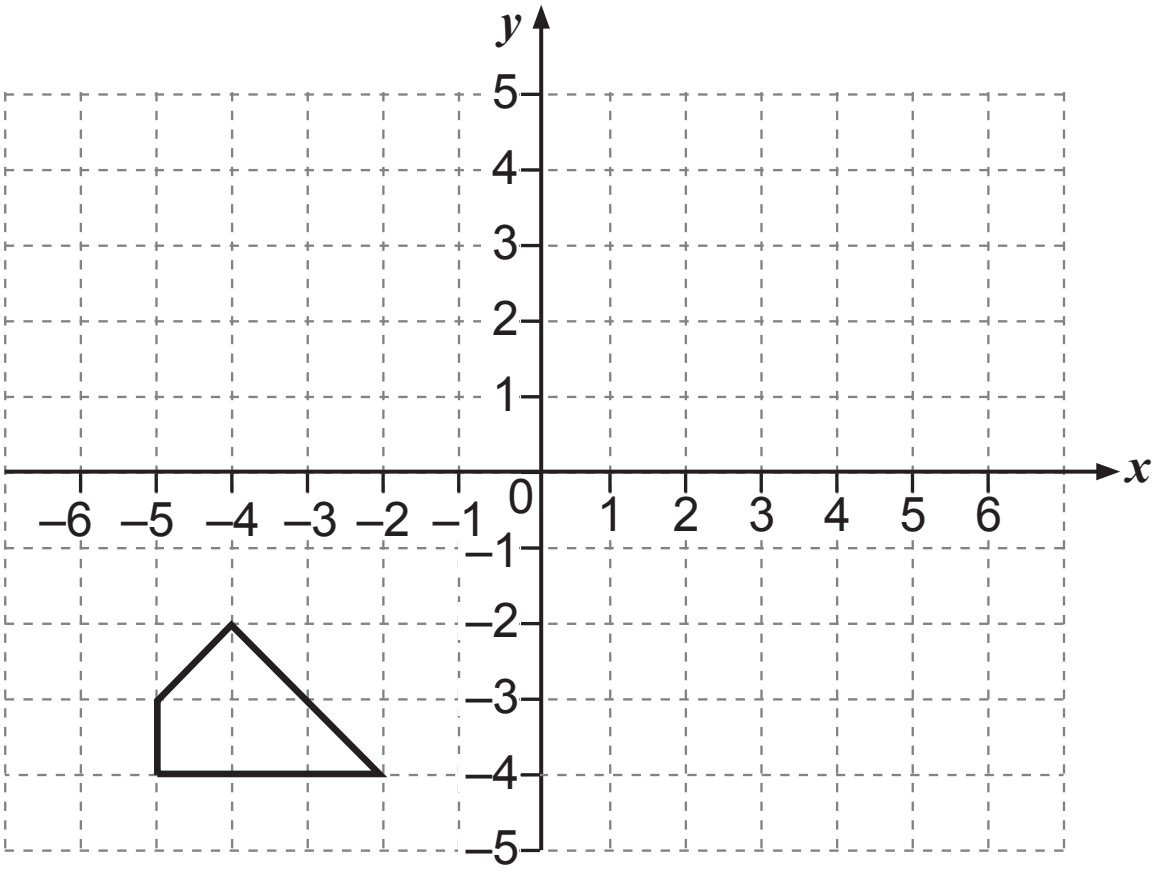
13 Rotate the shape 90° clockwise about the point (0, −2).
[2 marks]



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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? [3 marks]

Answer

1st Prize **£** _____ 2nd Prize **£** _____ 3rd Prize **£** _____

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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 marks]

(b) What is the best estimate of the probability of getting a 5 on this dice? [1 mark]

Answer _____

Quality of written communication will be assessed in this question.

(c) Do you think the dice is biased? Explain your answer clearly. [1 mark]

Answer _____ because _____

_____

_____

THIS IS THE END OF THE QUESTION PAPER

_____

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For Examiner's use only	
Question Number	**Marks**
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
Total Marks	

Examiner Number

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