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Rewarding Learning

Centre Number

Candidate Number

General Certificate of Secondary Education
January 2019

Mathematics

Unit T5 Paper 2
(With calculator)
Foundation Tier

[GMT52]

GMT52

THURSDAY 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 **7(b)**.
You should have a calculator, ruler, compasses and a protractor.
The Formula Sheet is on page 2.

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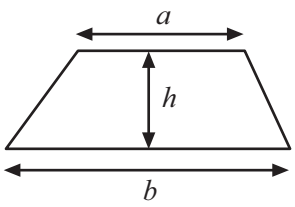
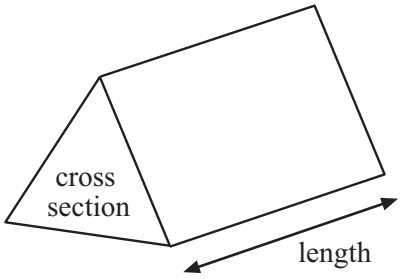
Formula Sheet

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



Volume of prism = area of cross section × length



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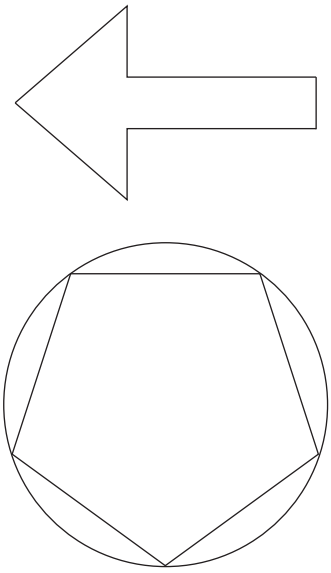
1 Draw the lines of symmetry on each shape below.



[3]

2 Phil buys a TV.

He pays a deposit of £200

He then pays £23 each week for 12 weeks.

How much does he pay altogether?

Answer £ _____ [3]

[Turn over

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3

P	=	x	+

Use one of the symbols or letters from the box to make each of these true.

(a) L _____ $3x - 6$ is a formula [1]

(b) $5 = 9 -$ _____ is an equation [1]

(c) L _____ $3x - 6$ is an expression [1]

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4 **(a)** Susie works 35 hours each week.

She earns £11.40 per hour.

How much does she earn each week?

Answer £ _____ [2]

(b) How much does she earn in a year?

Use 1 year = 52 weeks.

Answer £ _____ [1]

(c) How much does she earn each month on average?

Answer £ _____ [1]

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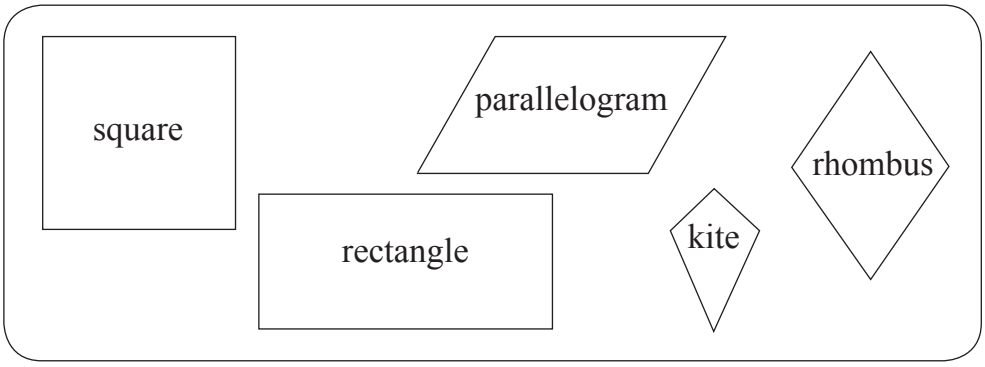
5 **(a)**



One shape is taken at random from the box above.

Which point (A, B, C, D, E or F) on the probability scale best matches the probability of the shape

(i) having four sides, Answer _____ [1]

(ii) having parallel sides, Answer _____ [1]

(iii) having four equal sides? Answer _____ [1]

(b) Name two shapes with rotational symmetry of order 2

Answer _____ and _____ [2]

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6 **(a)** 1 foot = 0.3048 metres

The longest caravan that may be towed on British roads is 7 metres.

How many feet is this?

Answer _____ feet [2]

(b) 1 gallon = 4.5 litres

Jim has two water barrels.

Barrel A contains 165 litres.
Barrel B contains 38 gallons.

Which barrel contains more water?

Answer Barrel _____
because

[2]

[Turn over

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7 **(a)** The last three digits of Ryan's mobile number are 4, 7 and 9

He has forgotten in what order they come.

List all the possibilities.

[2]

Quality of written communication will be assessed in this question.

(b) Niamh's last three digits are 3, 6 and 6

She also has forgotten in what order they come.

Explain why she is more likely to guess her correct order than Ryan is to guess his.

[1]

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8 When c = 2 and d = 5, evaluate $c + d^2$

Answer _____ [2]

9 Susan paid £25 for a backpack.

On holiday John paid 28 euro for an identical backpack.

The exchange rate was £1 = 1.10 euro.

Who paid more and how much more?

Answer _____ paid _____ more [3]

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10 Two fair dice A and B are rolled.

The numbers on the dice are added together.

All the possible outcomes are shown in the table below.

Dice B \ Dice A	**1**	**2**	**3**	**4**	**5**	**6**
1	2	3	4	5	6	7
2	3	4	5	6	7	8
3	4	5	6	7	8	9
4	5	6	7	8	9	10
5	6	7	8	9	10	11
6	7	8	9	10	11	12

What is the probability of getting a total which is a multiple of 3?

Answer _____ [2]

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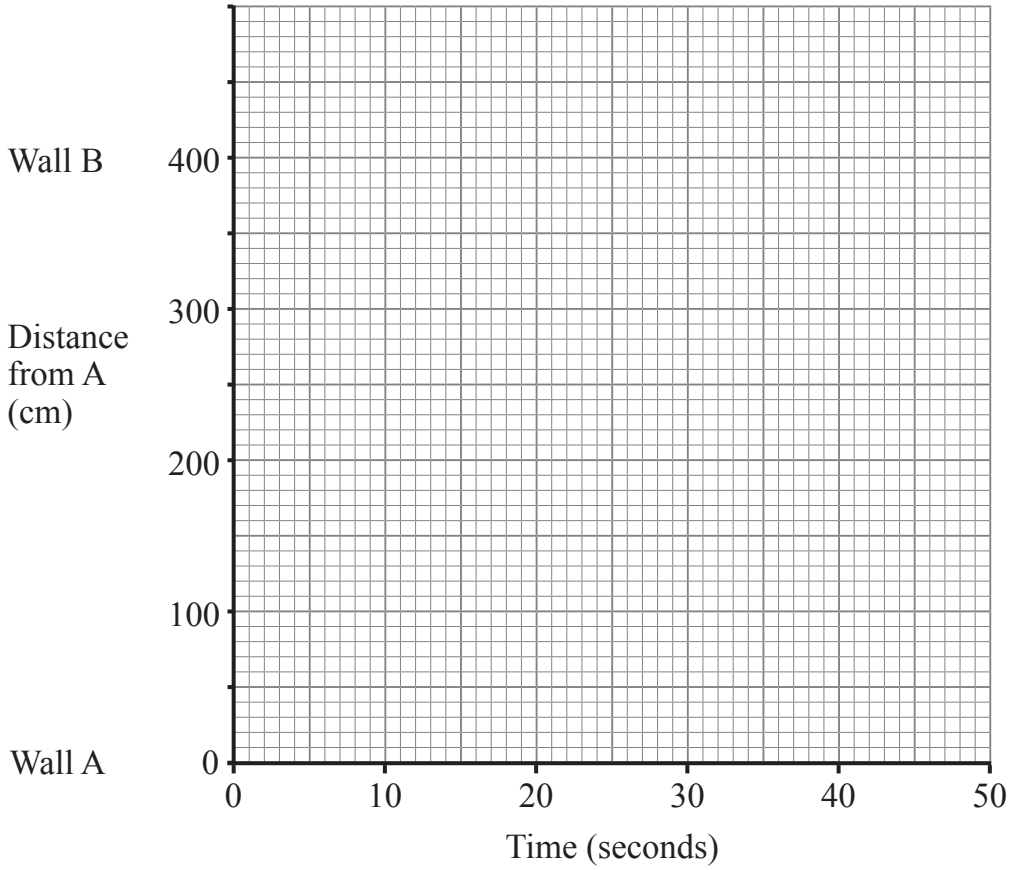
11 A robot moves across a room starting at a point which is 1m from wall A.

(a) Plot this point on the graph below.



[1]

(b) The robot then moves at a constant speed of 20 cm per second to wall B.

Draw the graph of this part of the robot's movement to wall B. [2]

(c) It then stops for 15 seconds and moves directly back to wall A at 40 cm per second.

Complete the graph. [2]

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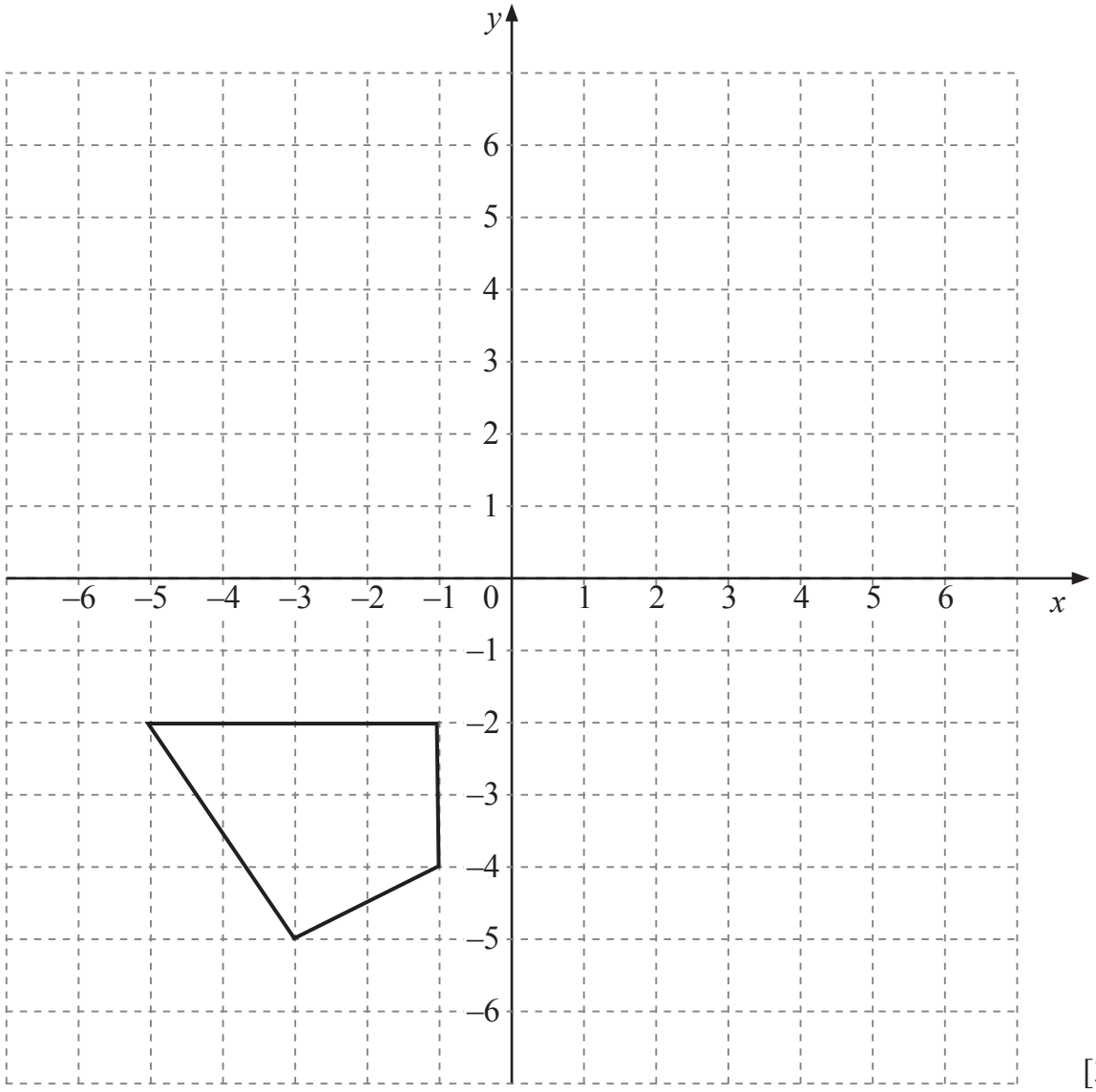
12 Rotate the shape 90° anticlockwise about the origin.



[3]

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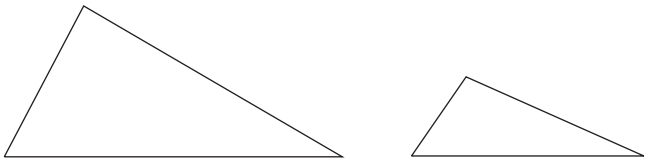
13



The area of the large triangle is 216 cm^2

The ratio of the area of the large triangle to the area of the small triangle is 3:1

What is the **total area** of the two triangles?

Answer _____ cm^2 [3]

14 A metal rod has a density of 11 g/cm^3

It has a volume of 48 cm^3

Find its mass.

Answer _____ g [2]

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15 A survey of the age of cars was carried out in a 4-floor car park.

Floor	Number of cars	Number of cars over 5 years old	Relative frequency (2 d.p.)
1	42	16	0.38
1 and 2	75	27	
1, 2 and 3	105	32	
1, 2, 3 and 4	114	37	

(a) Complete the table for the missing relative frequency values, rounding to 2 decimal places where necessary. [2]

(b) What is the best estimate for the probability of a car being over 5 years old?

Answer _____ [1]

(c) On another day there were 186 cars in the car park.

Calculate an estimate for the number of cars that were over 5 years old.

Answer _____ [2]

THIS IS THE END OF THE QUESTION PAPER

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For Examiner's use only	
Question Number	**Marks**
1	
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Total Marks	

Examiner Number

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