



General Certificate of Secondary Education
2016

Centre Number

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Candidate Number

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Mathematics

Unit T5 Paper 2
(With Calculator)
Foundation Tier



MV18

[GMT52]

THURSDAY 2 JUNE, 10.45–11.45am

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.

Complete in blue or black ink only.

Answer **all thirteen** questions.

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

You **must** use a calculator for this paper.

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

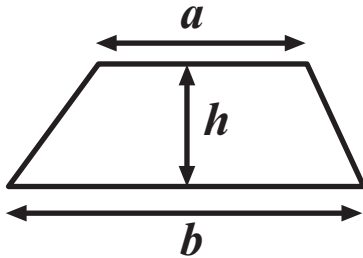
Question 11.

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

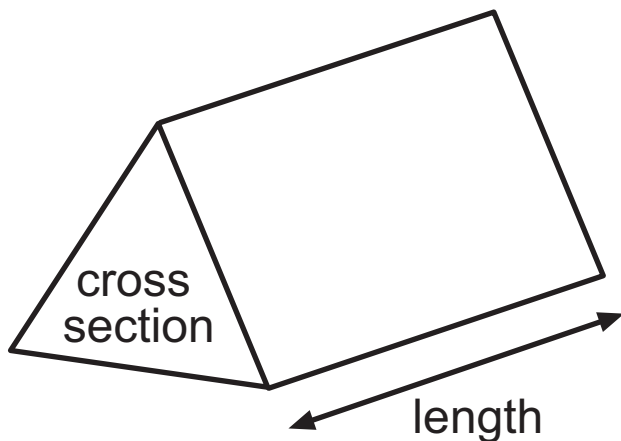
The Formula Sheet is on page 3.

Formula Sheet

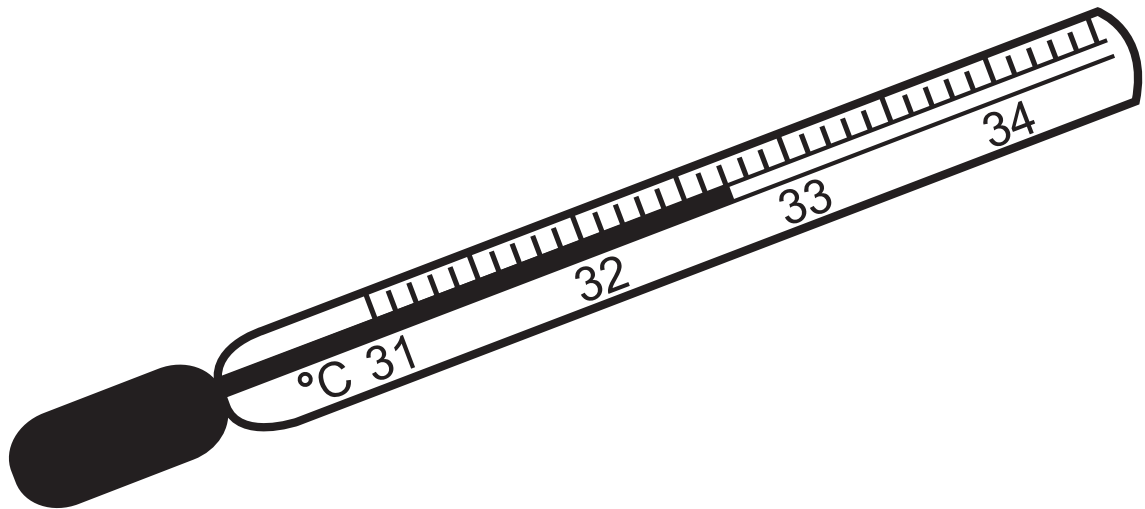
Area of trapezium $= \frac{1}{2} (a + b)h$



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

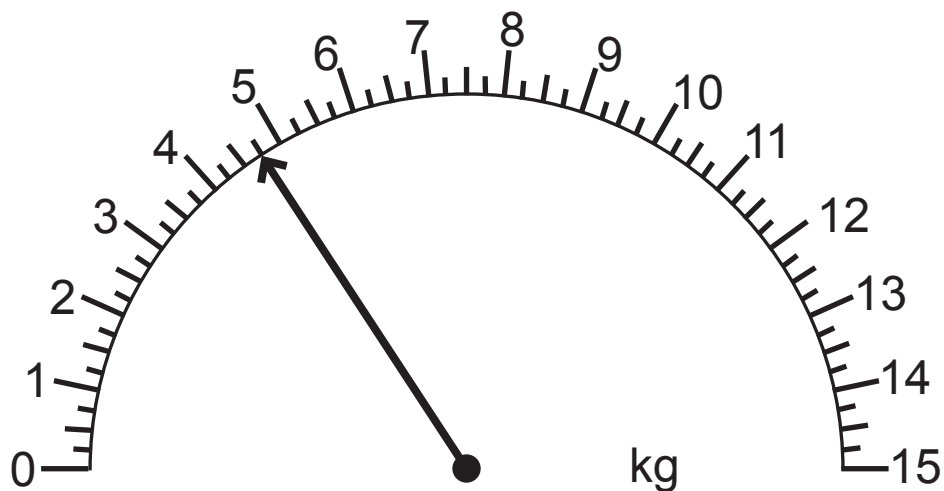


- 1 (a) Write down the temperature shown on the thermometer.
[1 mark]



Answer _____ °C

- (b) (i) Write down the weight shown on the scales.
[1 mark]



Answer _____ kg

- (ii) An extra 5.5 kg is added.

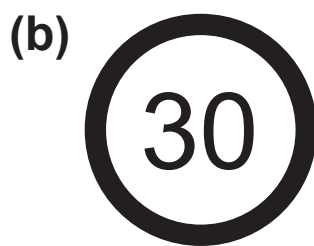
Draw an arrow to show the **total** weight now on the scales. [2 marks]

2 Here is a rule to change miles to kilometres.

Divide the number of miles by 5
and then multiply the answer by 8

(a) Use the rule to change 48 miles to kilometres.
[2 marks]

Answer _____ km



The sign shows the speed limit, in miles per hour, for some roads in Northern Ireland. Mike says that this is approximately 50 kilometres per hour.

Show that Mike is correct. [2 marks]

(c) Fill in the blanks in the rule below to change kilometres to miles. [1 mark]

Divide the number of kilometres by _____
and then multiply the answer by _____

3 Membership fees at a tennis club are calculated as follows:

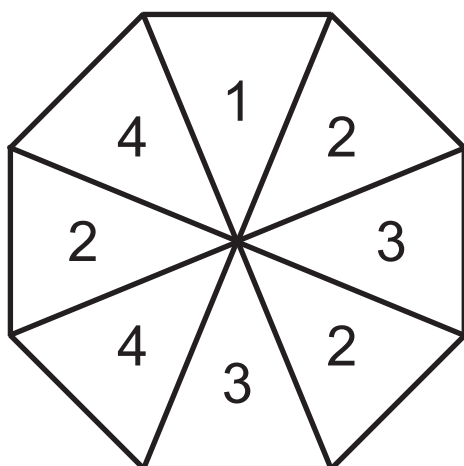
A registration fee of £12 plus £3 per week

Full membership is for 52 weeks.

How much does full membership cost in total? [2 marks]

Answer £ _____

- 4 The spinner below is a regular octagon. It is spun once and can land on any number.



- (a) Which number is the spinner most likely to land on?
[1 mark]

Answer _____

- (b) Which two numbers is the spinner equally likely to land on? [1 mark]

Answer _____ , _____

- (c) Write down a number which the spinner **cannot** land on.
[1 mark]

Answer _____

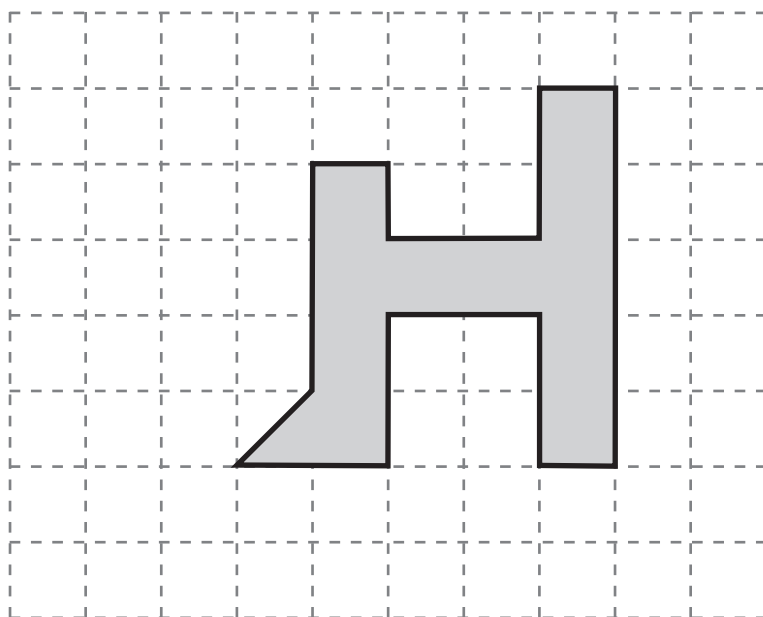
- (d) Is the spinner more likely to land on an odd number or an even number? [1 mark]

Answer _____

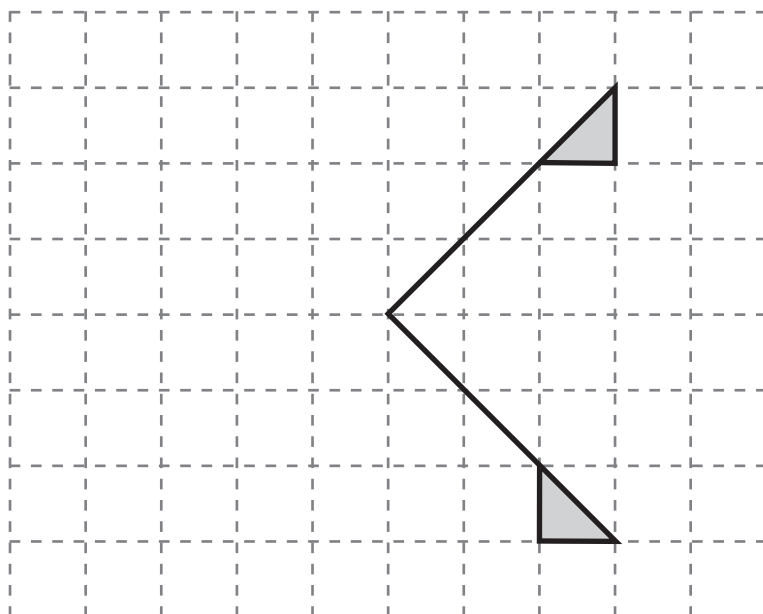
- (e) The spinner is spun 400 times. Estimate how many times you would expect it to land on the number 2 [2 marks]

Answer _____

- 5 (a) Draw and shade one triangle and one square in the diagram so that the complete shaded shape has one line of symmetry. [2 marks]



- (b) Complete the shape **below** so that the completed shape has rotational symmetry of order 4 [2 marks]



6 There are **twenty** balls in a bag.

4 are blue, 6 are green and the rest are white.

A ball is taken at random from the bag.

Mark the probability of each of the following events happening on the probability scale below using the capital letters. [3 marks]

B The ball taken is blue

W The ball taken is white

R The ball taken is red



7 (a) $P = 5a$

Work out the value of P when $a = 4$ [1 mark]

Answer $P =$ _____

(b) $Q = 3b + 2c$

Work out the value of Q when $b = 6$ and $c = 3$
[2 marks]

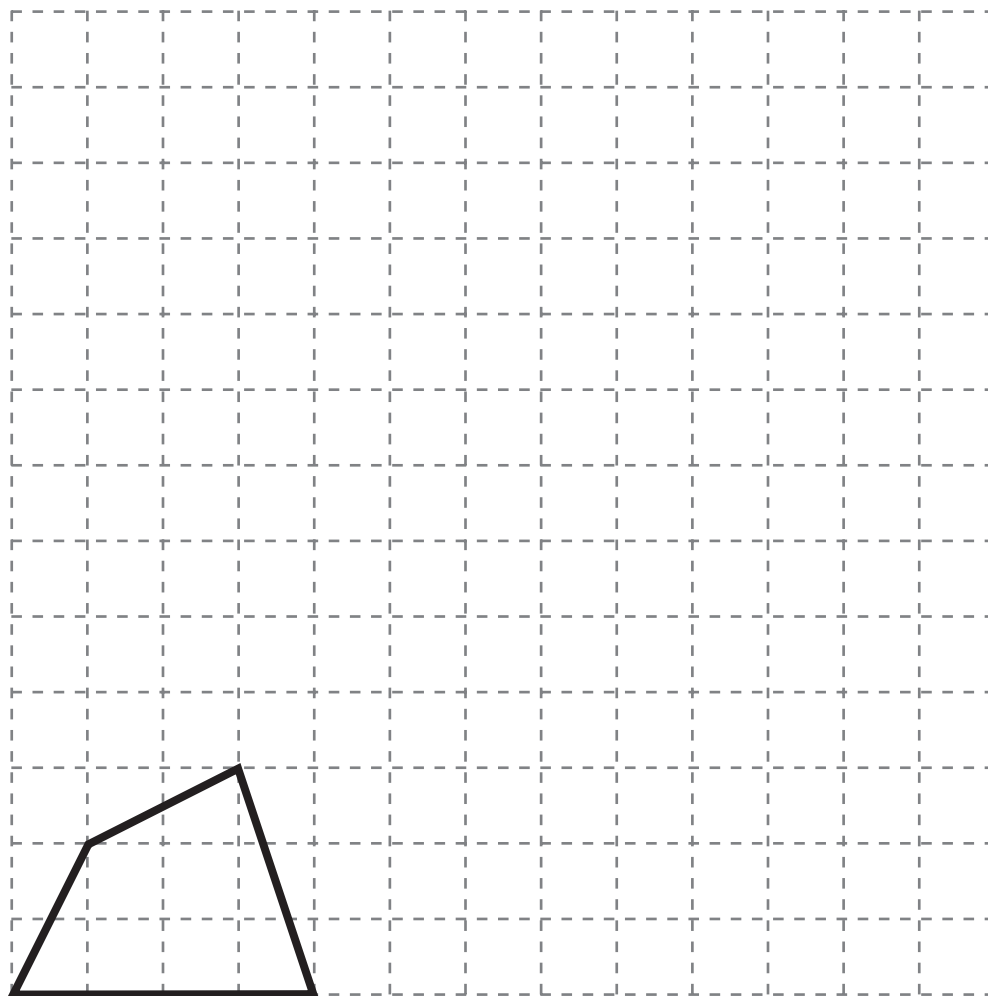
Answer $Q =$ _____

(c) $R = 2d - e - 4f$

Work out the value of R when $d = 2$, $e = 3$ and $f = \frac{1}{2}$
[2 marks]

Answer $R =$ _____

- 8 (a) Enlarge the shape below by scale factor 3 [2 marks]



- (b) How many times larger is the area of the larger shape than the smaller shape? [2 marks]

Answer _____ times

9 Eileen leaves home at 6 pm and goes for a walk.

She walks at an average speed of 4 km/h for 90 minutes.

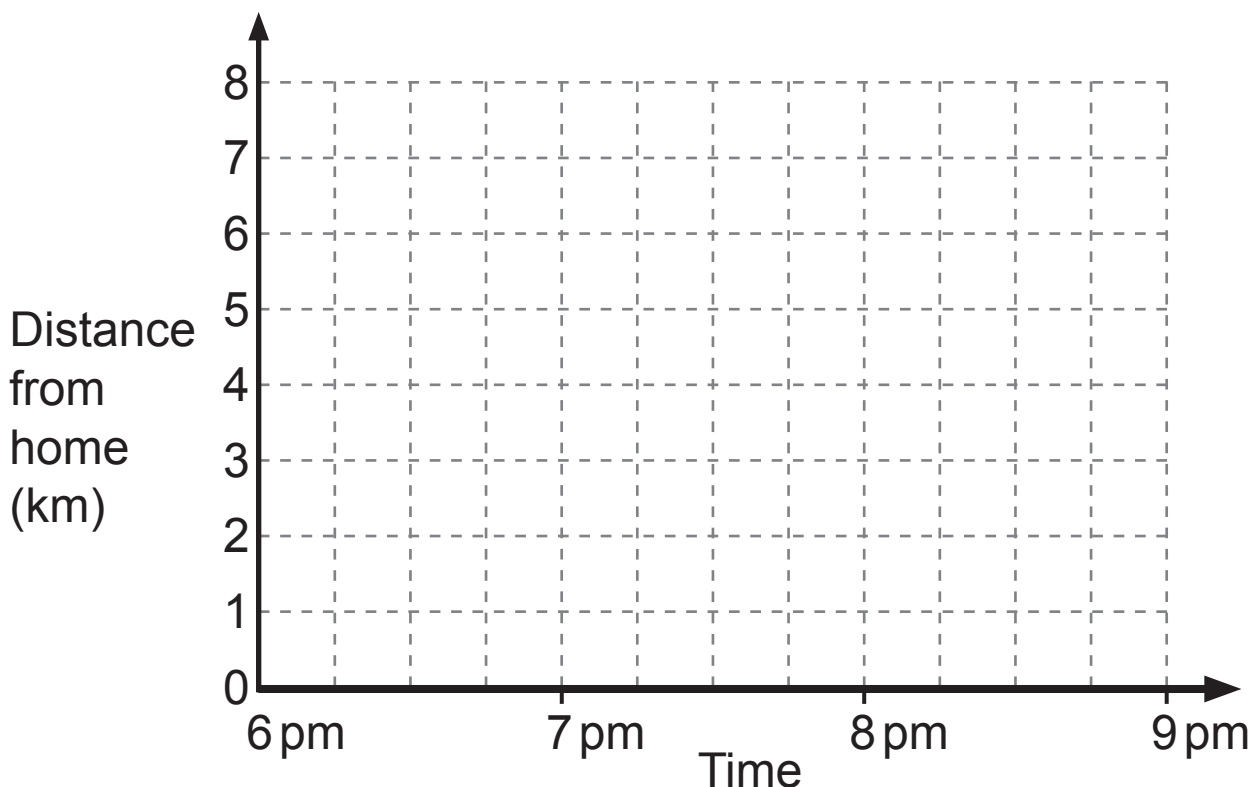
(a) How far has she walked? [1 mark]

Answer _____ km

She stops to rest for 15 minutes.

She then runs back home and arrives home at 8.30 pm.

(b) On the grid below draw a distance-time graph to show Eileen's complete journey. [3 marks]



(c) What is Eileen's average speed as she runs back home? [2 marks]

Answer _____ km/h

10 Here is a recipe for making some scones.

Self-raising flour	340 g
Caster sugar	55 g
Butter	85 g
Milk	125 ml
Natural yoghurt	60 ml

Linda has only 100 ml of milk.

Complete the table to show how much of the other ingredients she needs. [3 marks]

Self-raising flour	_____ g
Caster sugar	_____ g
Butter	_____ g
Milk	100 ml
Natural yoghurt	_____ ml

Quality of written communication will be assessed in this question.

11 p is a prime number greater than 2 and q is an even number.

Which of the statements below describes the number $p(q + 1)$?

“always even”

“always odd”

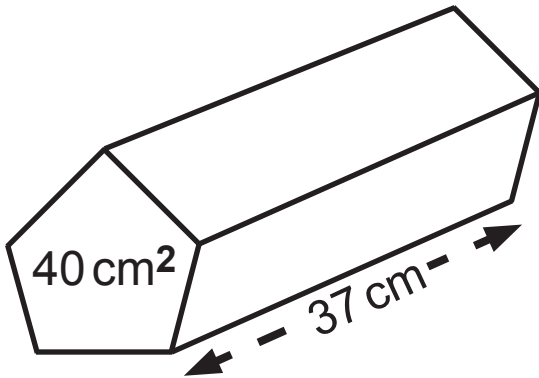
“could be even or odd”

Explain your answer. [2 marks]

Answer _____

because _____

- 12** A solid pentagonal prism has mass 5300 g.
The cross-sectional area is 40 cm^2 and the length is 37 cm.



Calculate the density of the prism in g/cm^3 . [4 marks]

Give your answer to an appropriate degree of accuracy.

Answer _____ g/cm^3

13 Make v the subject of $2s = (u + v)t$ [2 marks]

Answer $v =$ _____

THIS IS THE END OF THE QUESTION PAPER

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

Total Marks	
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Examiner Number

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