Rewarding Learning

Centre Number

Candidate Number

General Certificate of Secondary Education
January 2017

Mathematics

Unit T5 Paper 1
(Non-calculator)
Foundation Tier

MV18

[GMT51]

WEDNESDAY 11 JANUARY, 9.15am–10.15am

Time

1 hour, plus your additional time allowance.

Instructions to Candidates

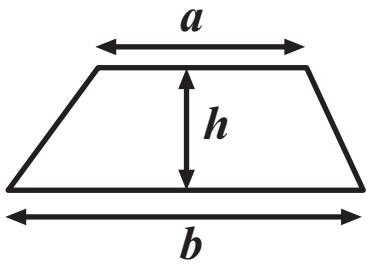
Write your Centre Number and Candidate Number in the spaces provided at the top of this page.
You must answer the questions in the spaces provided.
Complete in black ink only.
Answer **all fourteen** questions.
All working should be clearly shown in the spaces provided.
Marks may be awarded for partially correct solutions.
You **must not** use a calculator for this paper.

Information for Candidates

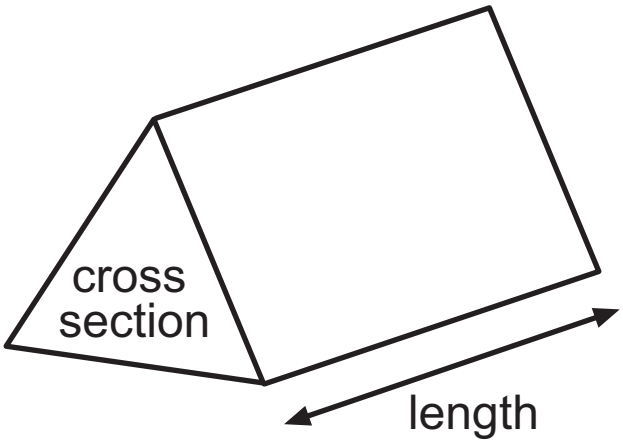
The total mark for this paper is 50.
Figures in brackets printed at the end of each question indicate the marks awarded to each question or part question.
Functional Elements will be assessed in this paper.
Quality of written communication will be assessed in Question **2**.
You should have a ruler, 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 = area of cross section × length



1 (a) **Estimate** the cost of 31 books at **£**8.85 each.
[1 mark]

Answer **£** _____

(b) **Estimate** how many 18.5 cm lengths of tape can be cut from 1500 cm. [1 mark]

Answer _____

Quality of written communication will be assessed in this question.

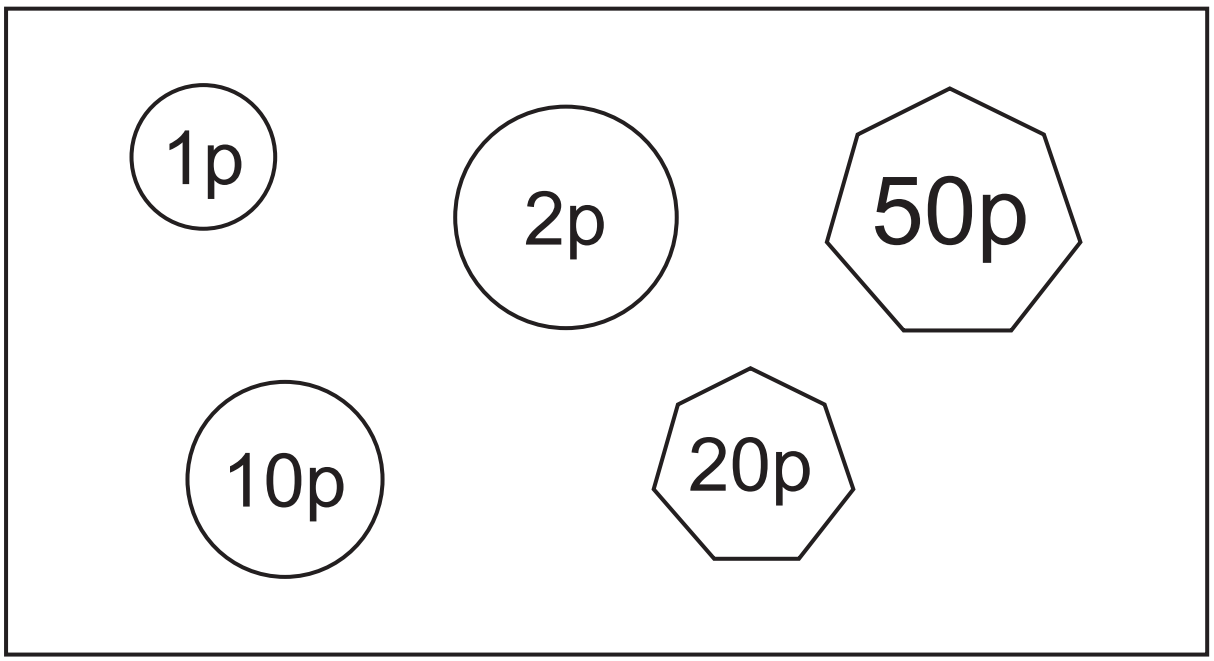
2 Sean earns **£**8 per hour for eight hours work during the week and double time for four hours work at the weekend.

Jane earns **£**9 per hour for six hours work during the week and time and a half for six hours work at the weekend.

Who earns more and how much more? [5 marks]

Answer _____ earns **£** _____ more

3 Five coins are put in a box. The coins are 1p, 2p, 10p, 20p and 50p. One coin is taken at random.



Impossible	**Unlikely**	**Likely**	**Certain**
Very Unlikely	**Evens**	**Very Likely**	

From the list of words given, write the most appropriate word to describe the chance of the coin
[1 mark for each word]

(a) being circular,

Answer _____

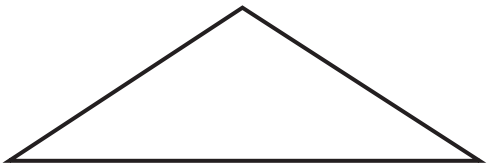
(b) having a value less than **£**1,

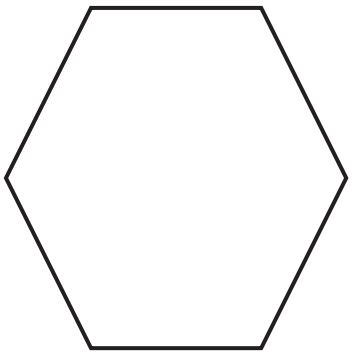
Answer _____

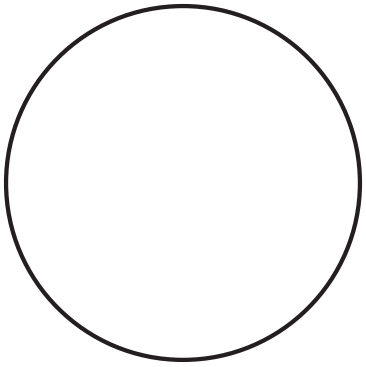
(c) weighing more than 1 kg.

Answer _____

4 Draw a line from each shape to the number of lines of symmetry that it has. [4 marks]







none

one

three

four

six

eight

about 50

more than a million

5 Which **imperial** unit would be used to measure

(a) how much petrol a car tank can hold when full, [1 mark]

Answer _____

(b) how far a runner can run in 20 seconds, [1 mark]

Answer _____

(c) the weight of a biscuit? [1 mark]

Answer _____

6 Chairs are set out for a school concert.

There are 23 rows of 9 chairs on each side of a middle aisle.

382 people attend the concert.

How many empty seats are there? [3 marks]

Answer _____

7 **(a)** Calculate $(19 - 4) - 1 \times 5$ [1 mark]

Answer _____

(b) When $a = 12$ and $b = 7$

evaluate $2a - 3b$ [2 marks]

Answer _____

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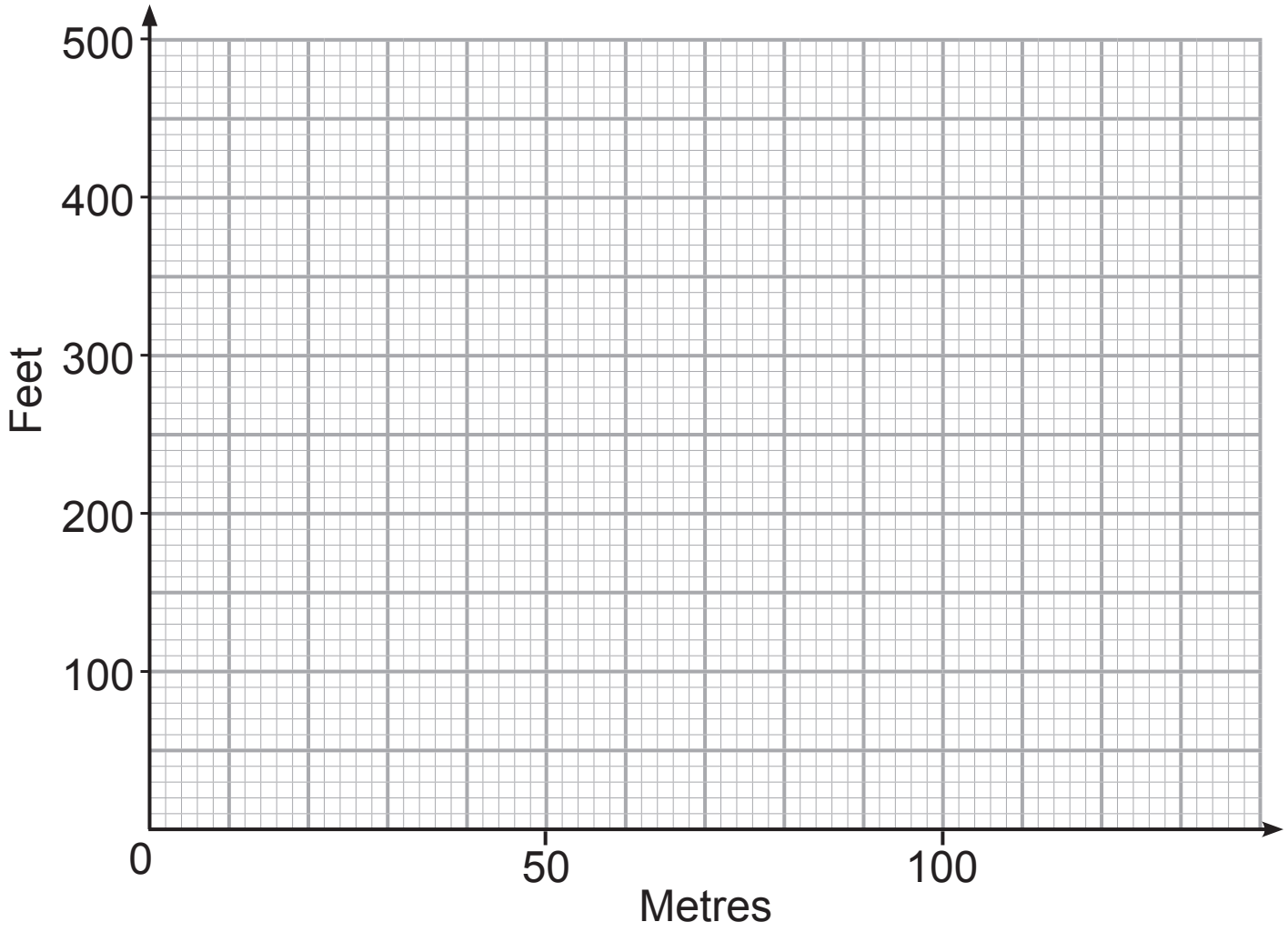
(Questions continue overleaf)

8 **(a)** 1 metre is approximately 3.3 feet. Use this to complete the table below. [1 mark]

Metres	0	50	100
Feet		165	

(b) Use the values in your table to draw a conversion graph. [2 marks]



Use your graph to answer the following:

(c) The men's Olympic Hammer Throw record was 85 metres. How many feet was this? [1 mark]

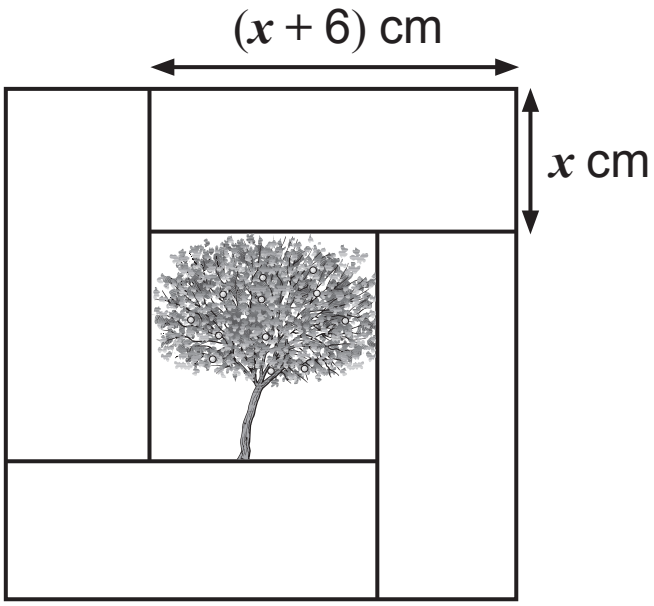
Answer _____ feet

(d) The women's Olympic Shot Put record was 75 feet. How many metres was this? [1 mark]

Answer _____ metres

9 Four identical rectangular tiles surround a picture as shown in the diagram to form a frame.

The sides of the rectangular tile are x cm and $(x + 6)$ cm.



(a) Find a formula for the perimeter P of the frame in its simplest form. [2 marks]

Answer P = _____

(b) What is the area of the picture? [2 marks]

Answer _____ cm^2

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(Questions continue overleaf)

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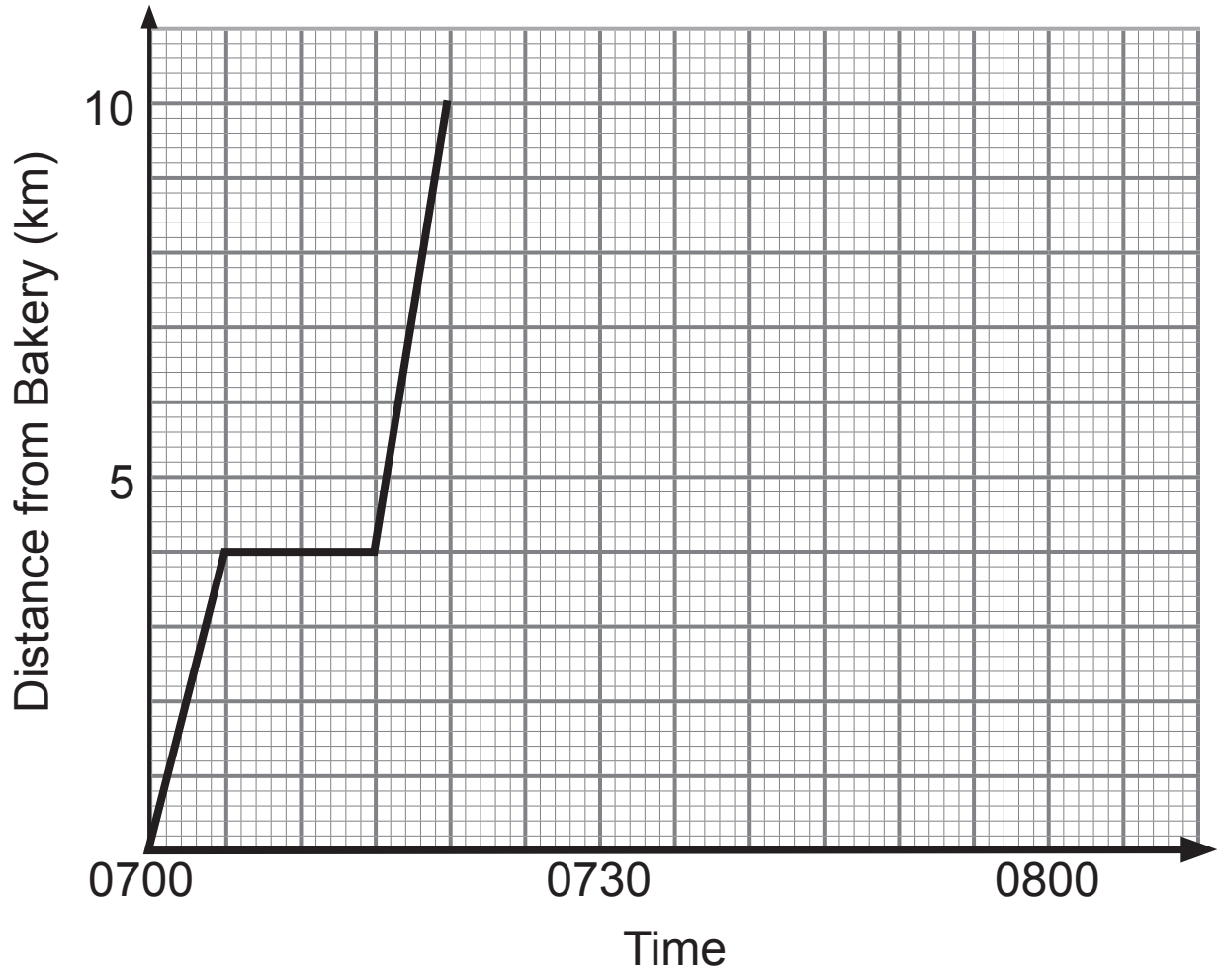

The graph shows the morning deliveries made by a baker.

He leaves the bakery at 0700

The first delivery is to a hotel.

(a) How far is the hotel from the bakery? [1 mark]

Answer _____ km

The second delivery is to a cake shop which is 10 km from the bakery.

(b) At what time does the baker reach the cake shop? [1 mark]

Answer _____

The baker spends 5 minutes at the cake shop and then returns to the bakery at an average speed of 40 km/h.

(c) Use this information to complete the graph. [2 marks]

11 The probability that a letter posted first class arrives the next day is 0.85

Eva posts 200 wedding invitations first class.

How many invitations would she expect to arrive the next day? [2 marks]

Answer _____

12 $Q = \dfrac{P}{R\,(4 - t)}$

Calculate the value of Q when $P = 36$, $R = 3$ and $t = -2$
[3 marks]

Answer $Q =$ _____

13 A golf shop sells gloves in three different sizes; small, medium and large.

The gloves come in 2 colours, black and white.

The table below shows how many of each size and colour they have in stock.

	Small	**Medium**	**Large**
Black	10	22	15
White	9	20	12

(a) How many gloves does the golf shop have in stock? [1 mark]

Answer _____

The gloves are for either a right hand or for a left hand.

The ratio of right-handed gloves to left-handed gloves is 7:4

(b) How many right-handed gloves are there? [1 mark]

Answer _____

(c) The gloves are all kept together in a box and a glove is taken at random.

What is the probability that it is a large glove? [2 marks]

Answer _____

(d) The glove is replaced in the box. One glove is taken at random. It is black.

What is the probability that it is medium? [2 marks]

Answer _____

14 Two boats are 40 km apart.

Boat Y is due east of boat X as shown in the scaled diagram below.

The scale used is 1 cm = 5 km

Lobster pots are placed in a region which is less than 25 km from boat X and less than 30 km from boat Y.

Using a ruler and compasses, show this region on the diagram by shading. [3 marks]

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	
Total Marks	

Examiner Number