Rewarding Learning

General Certificate of Secondary Education
January 2014

Mathematics

Unit T5 Paper 2
(With calculator)
Foundation Tier

ML

[GMT52]

WEDNESDAY 15 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.
Complete in blue or black ink only.
Answer **all thirteen** questions.
Any working should be clearly shown in the spaces provided since 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.
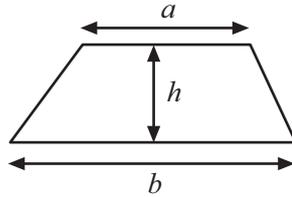Functional Elements will be assessed in this paper.
Quality of written communication will be assessed in **questions 2 and 3**.
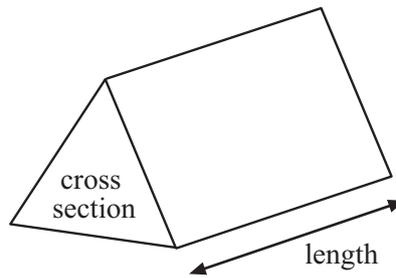You should have a calculator, ruler, compasses and a protractor.
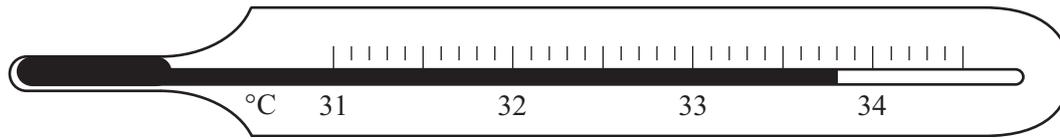The Formula Sheet is on page 2.

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Formula Sheet

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

Volume of prism = area of cross section × length

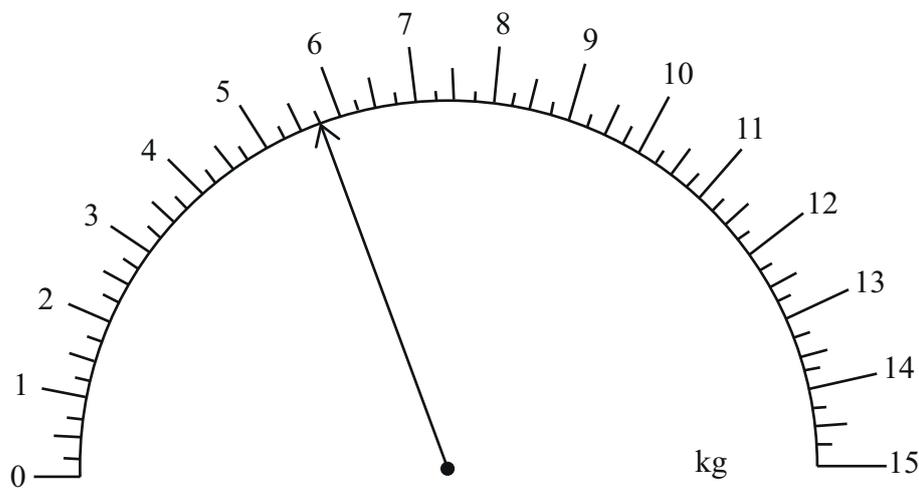**1** **(a)** Write down the temperature shown on the thermometer.

°C   31   32   33   34

Answer _____° C [1]

(b) (i) Write down the weight shown by the arrow below.

Answer _____ kg [1]

(ii) An extra 3.5 kg is added.
Draw an arrow on the scale above to show the **total** weight now. [2]

Total Question 1

[Turn over

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3

Quality of written communication will be assessed in this question.

2 Jean and Rose each have a bag of sweets.
Jean has equal numbers of toffee, mint and fruit sweets.
Rose has twice as many mint sweets as fruit sweets but she has no toffee sweets.

They each take one sweet at random from their own bag.

(a) Who is more likely to take a mint sweet? **Explain your answer clearly.**

_____ because _____

_____ [2]

(b) Who is more likely to take a fruit sweet? **Explain your answer clearly.**

_____ because _____

_____ [2]

Total Question 2

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4

Quality of written communication will be assessed in this question.

3   Jill has a part-time job in the petrol station.
The pay is £7 per hour.
She earns time and a half on Saturday and double time on Sunday.
Last week she worked 6 hours on Monday, 6 hours on Saturday and 4 hours on Sunday.
How much did she earn in total?
Show your working out clearly.

Answer £ _____ [5]

Total Question 3

[Turn over

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5

4 Every car salesperson with NewAutos earns a basic monthly salary of £1800.
In addition they earn a bonus of £75 for every car that they sell in the month.

> Total monthly salary = £1800 + Number of cars sold × Bonus per car sold

(a) Eileen is a car salesperson with NewAutos.
She sold 15 cars in April.
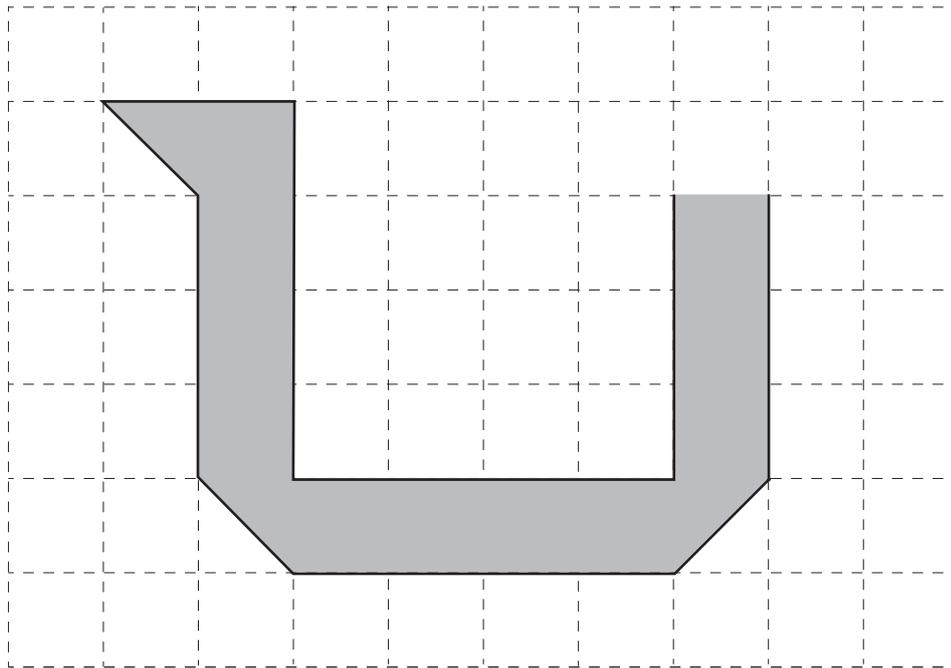Work out her total monthly salary for April.

Answer £ _____ [2]

(b) Jim is another car salesperson with NewAutos.
In May his total monthly salary was £3525
Work out how many cars Jim sold in May.

Total Question 4

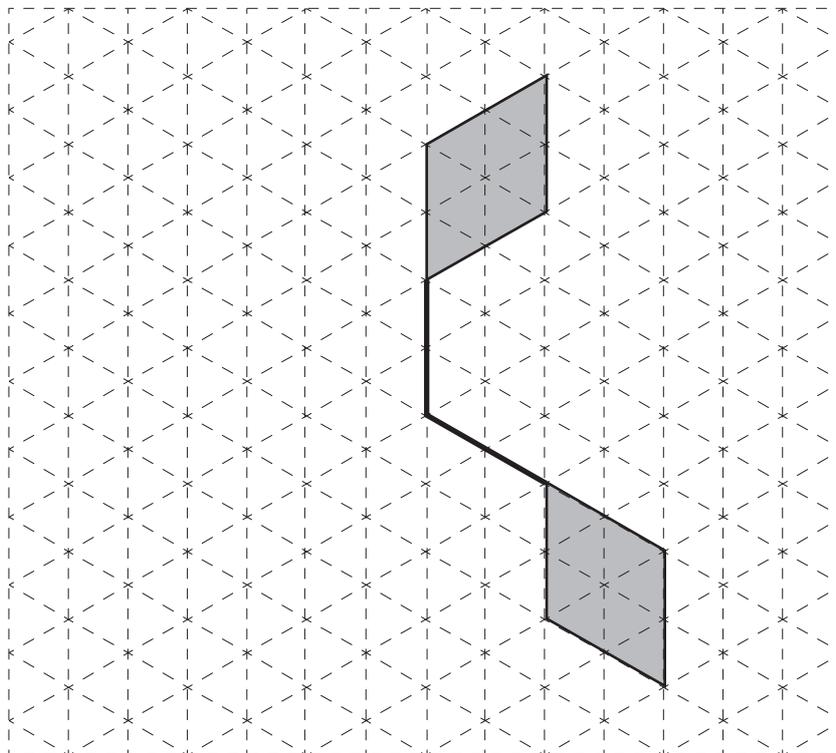Answer _____ cars [2]

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6

5 **(a)** Shade one square and one triangle in the diagram below so that the complete shaded shape has one line of symmetry.

[2]

(b) Complete the shape **below** so that the completed shape has rotational symmetry of order 3.

[2]

Total Question 5

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[Turn over

6 Mary has 63 square tiles and she wants to arrange them all to make a rectangle.

Write down the length and width of two **different** rectangles that she could make.

Answer   1st rectangle length ＿＿＿＿＿ , width ＿＿＿＿ [1]

2nd rectangle length ＿＿＿＿＿ , width ＿＿＿＿ [1]

<table>
<tr><th colspan="2">Examiner Only</th></tr>
<tr><th>Marks</th><th>Remark</th></tr>
</table>

Total Question 6

7 700 people arrive at a bus station and have to be taken to a local airport.

The airport buses can carry a maximum of 48 passengers.

(a) How many buses are filled?

Answer ＿＿＿＿＿ buses [1]

(b) Calculate the number of people who have to travel in the last bus to make sure all 700 people get to the airport.

Answer ＿＿＿＿＿ people [1]

Total Question 7

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8   John was cycling at an average speed of 25 mph.
Convert this speed to km/h.

Answer _____ km/h [2]

Total Question 8

9   There is a box with packets of crisps of different flavours.
A packet of crisps is taken at random from the box.
Some of the probabilities of taking each flavour are shown in the table below.

Flavour	Cheese	Vinegar	Bacon	Sausage	Beef
Probability	0.3	0.12		0.25	0.05

(a) Calculate the probability that the crisps are Bacon flavour.

Answer _____ [2]

(b) Calculate the probability that the crisps are **not** Vinegar flavour.

Total Question 9

Answer _____ [1]

[Turn over

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9

10 Katie went on a cycling trip from her home.
The diagram below shows the distance/time graph for her complete journey.
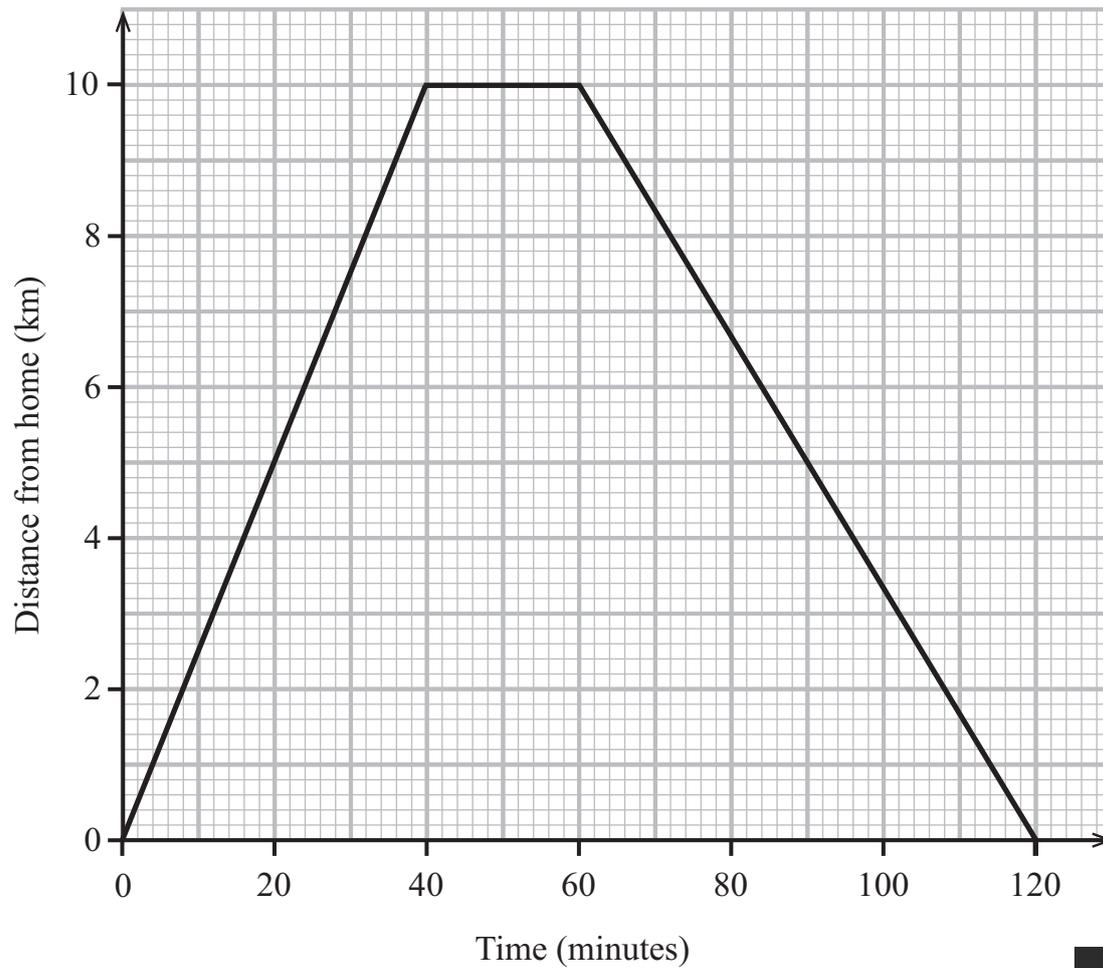
(a) What is the meaning of the horizontal line on the graph?

Answer _____ [1]

(b) How far did Katie travel in the first 30 minutes?

Answer _____ km [1]

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10

(c) How long did it take her to travel the first 4 kilometres?

Answer _____ minutes [1]

(d) Where was Katie after 120 minutes?

Answer _____ [1]

(e) What was the average speed for the first 30 minutes?

Answer _____ km/h [1]

(f) At what stage of the trip was she travelling at the fastest average speed?

Answer _____ [1]

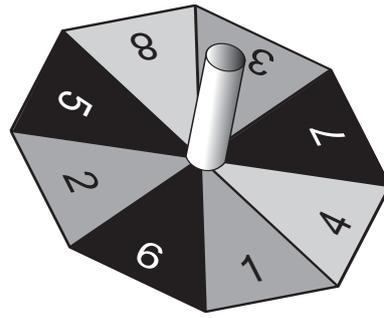**(g)** How many minutes did it take her to travel a distance of 14 kilometres?
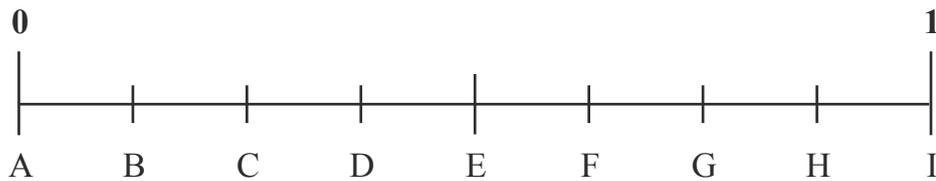
Answer _____ minutes [1]

Total Question 10

[Turn over

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11

11 This spinner is a regular octagon.

(a) The spinner is spun once.
Below is a probability scale.

From the scale **write down the letter** that represents

(i) the probability of the spinner landing on the number 10

Answer _____ [1]

(ii) the probability of the spinner landing on an even number

Answer _____ [1]

(iii) the probability of the spinner landing on the number 3

Answer _____ [1]

(iv) the probability of the spinner landing on a multiple of 4

Answer _____ [1]

(b) The spinner is spun 60 times. How many times do you think it would land on a number greater than 2?

Answer _____ [2]

12 Divide £292 in the ratio 1 : 3 : 4

Answer _____ , _____ , _____ [3]

[Turn over

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13

13 A solid hexagonal prism of mass 8600 g has a cross-sectional area of 60 cm^2 and length 23 cm.

Calculate the density of the prism in g/cm^3.

Write your answer to an appropriate degree of accuracy.

Answer _____ g/cm^3 [4]

Total Question 13

THIS IS THE END OF THE QUESTION PAPER

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