Rewarding Learning

Centre Number

Candidate Number

General Certificate of Secondary Education
2018

Mathematics

Unit T5 Paper 2
(With calculator)
Foundation Tier

ML

[GMT52]

THURSDAY 7 JUNE, 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 outside the boxed area on each page, on blank pages or tracing paper.
Complete in black ink only.
Answer **all thirteen** 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 **6**.
You should have a calculator, ruler, compasses and a protractor.
The Formula Sheet is on page 2.

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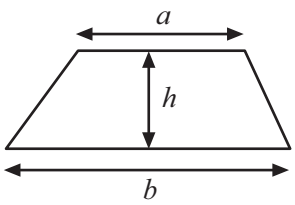
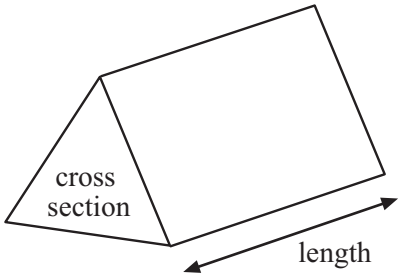
Formula Sheet

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



Volume of prism = area of cross section × length



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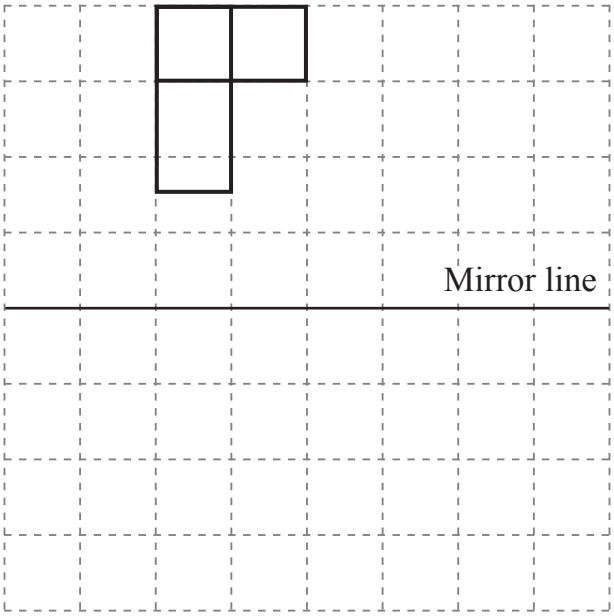
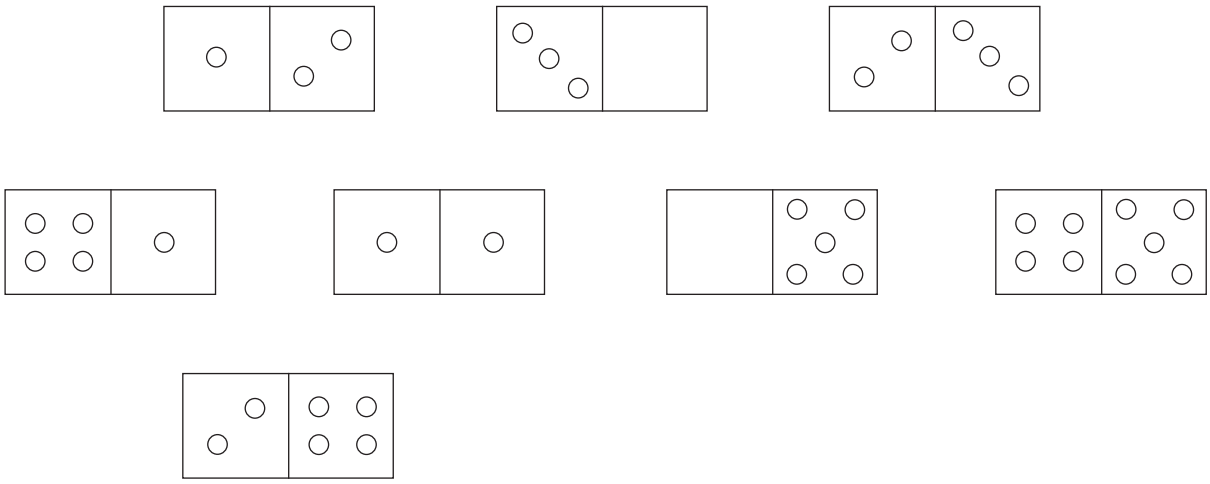


Draw the reflection of this shape in the mirror line. [2]

[Turn over

2



One of the eight dominoes above is taken at random.
Complete each of the following.

(a) (i) The most likely total of dots on the domino taken is _____ [1]

(ii) The total number of dots on the domino taken is equally likely to be

2 or _____ or _____ [2]

(b) Is the total number of dots more likely to be odd or even? Answer _____ [1]

(c) Write down a total number of dots with zero probability. Answer _____ [1]

3 d is a very small decimal (less than 0.01).

Look at the four expressions.

$$d + 100 \qquad 100 - d \qquad 100 \times d \qquad 100 \div d$$

(a) Which of these is the largest? Answer _____ [1]

(b) Which of these is the smallest? Answer _____ [1]

4 A B R A C A D A B R A

One letter is taken at random from the list above.

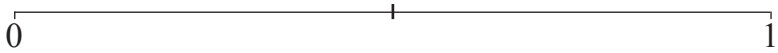
Use the letters A, B, C, E to mark the probabilities of each event on the scale below.

A: the probability of A being taken,

B: the probability of B being taken,

C: the probability of C being taken,

E: the probability of E being taken.

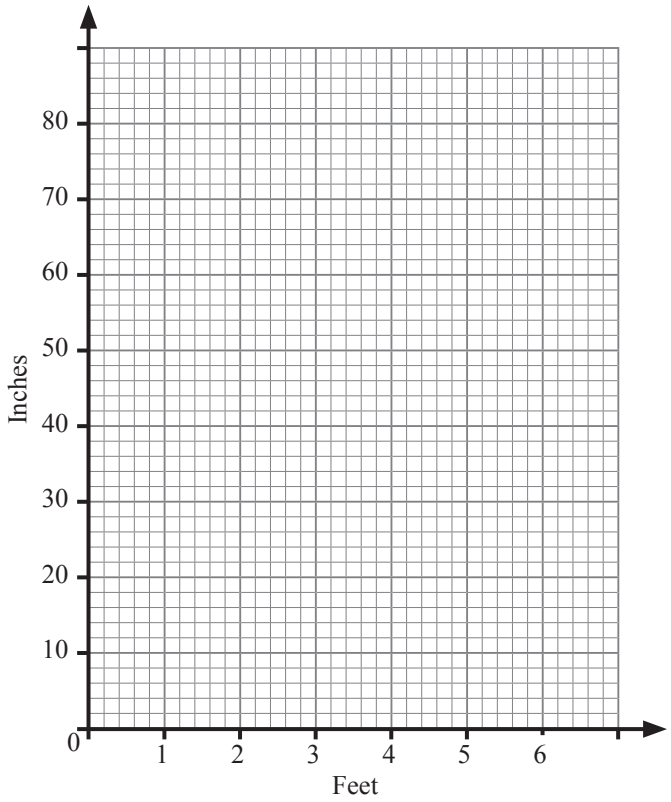


[4]

[Turn over

5 1 foot = 12 inches

(a) Use this information to plot 3 points and then draw a conversion graph.



[3]

(b) Cory measured a distance of 10.4 feet.

Explain clearly how you can **use your graph** to find out how many inches this is.

_____

_____

_____ [2]

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(Questions continue overleaf)

Quality of written communication will be assessed in this question.

6 Jack takes Jill to an Indian restaurant.

Jack will pay by cash if he has enough money. Or he will pay by credit card.

They each order a starter, a main course and a side dish from the menu below.

Starter	
Prawn Puri	£3.95
Onion Bhagee	£3.25
Chicken Pakora	£3.75
Garlic Mushroom	£3.25
Tandoori Mix	£4.30

Main	
Tandoori Chicken	£9.95
Lamb Shalik	£10.25
King Prawn Masala	£10.45
Chicken Korma	£8.75
Vegetable Biryani	£7.25

Side Dish	
Pilau Rice	£1.95
Naan	£1.95
Chapati	£1.85
Chips	£2.25
Side Salad	£1.70

Jack orders Chicken Pakora, King Prawn Masala and Pilau Rice.

Jill orders Garlic Mushroom, Vegetable Biryani and Naan.

Jack has £28 cash.

(a) Will Jack pay by cash or credit card?

You must show all your working.

Answer _____ [4]

(b) To change the answer in **(a)**, how could Jack swap one item in **his** order?

_____

_____ [2]

[Turn over

7 **(a)** n is any whole number greater than 2

What type of whole number is $2n - 3$?

Answer _____ [1]

(b) A is a prime number.

B is an odd number.

Orla says that A × B is always odd.

Give a counter-example to show that Orla is wrong.

Answer A = _____, B = _____ [2]

8 Rory travels to work every day, Monday to Friday.

He can travel by car or by train.

Use the following information to decide which way is cheaper.

Car	
Distance	56 miles (return) per day
Fuel consumption	8 miles per litre
Diesel Cost	£1.14 per litre

Train	
Weekly Return Ticket	£39
Daily Return Ticket	£9

Show all your working out.

Answer _____ [3]

[Turn over

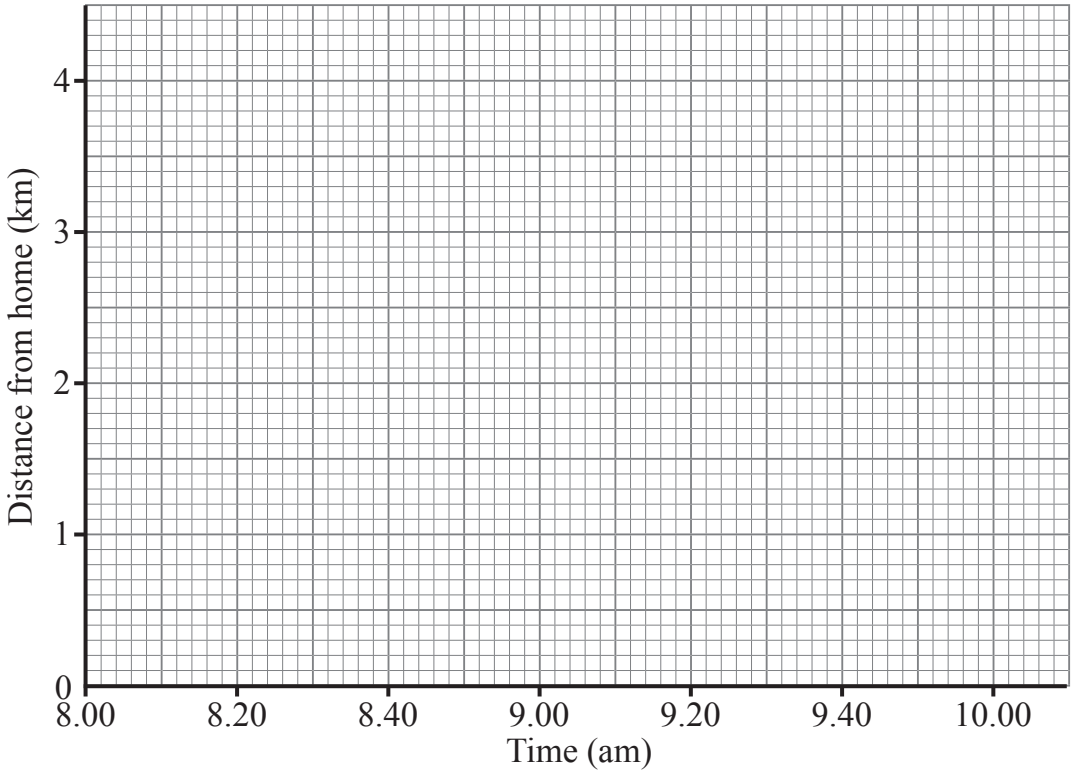
9 Clare works in a library and cycles from home at a steady speed.

She leaves home at 8.10 am.

After 30 minutes she gets a puncture when she is 2 km from home.

It takes 10 minutes to fix the puncture.

(a) Show this information on the graph for Clare's journey.



[2]

(b) The library is 4 km from Clare's house.

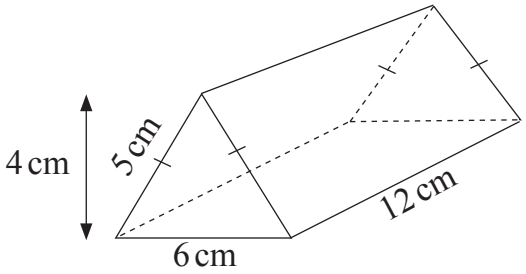
Clare completes her journey at an average speed of 8 km/hr.

Show the last part of her journey on the graph. [2]

(c) How many minutes after 9 am does she arrive?

Answer _____ minutes [1]

10



Calculate the **total** surface area of this triangular prism.

Answer _____ cm^2 [3]

[Turn over

11 The headmaster of Happy Valley High School records how long his Year 11 and Year 12 pupils take to get to school.

Time t (minutes)	Number in Year 11	Number in Year 12
$0 < t \leqslant 10$	15	17
$10 < t \leqslant 20$	28	25
$20 < t \leqslant 30$	34	40
$30 < t \leqslant 40$	3	4

The headmaster takes a pupil at random from Year 11

(a) What is the probability the Year 11 pupil gets to school in 20 minutes or less?

Answer _____ [2]

Later, the headmaster takes one pupil at random from the whole of Year 11 and Year 12

(b) What is the probability that this pupil gets to school in 20 minutes or less?

Answer _____ [2]

There are 450 pupils in Happy Valley High School.

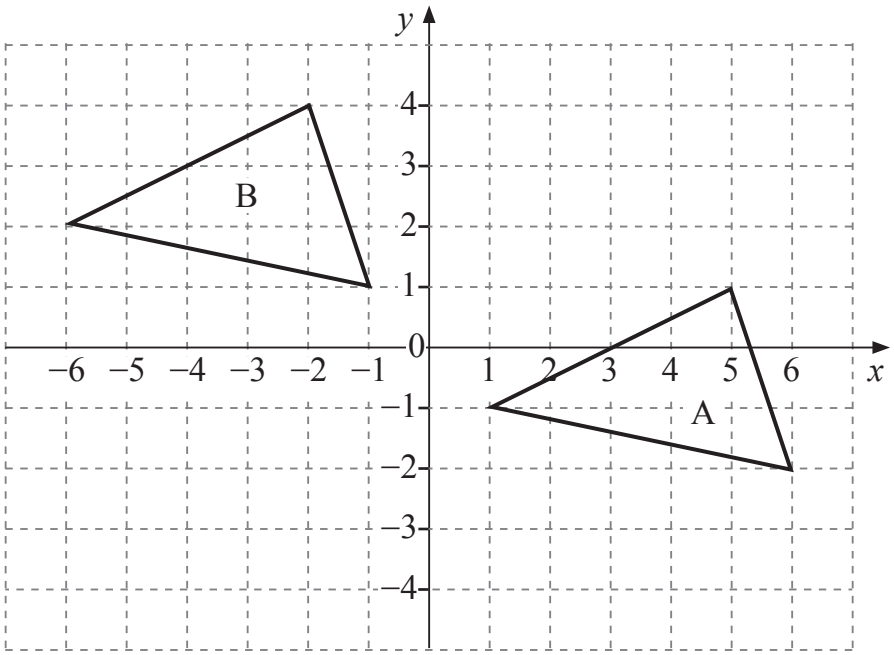
(c) Estimate the number of pupils at this school who take longer than 30 minutes to get to school.

Show clearly how you get your answer.

Answer _____ [3]

[Turn over

12



Describe fully the single transformation that moves triangle A to triangle B.

Answer _____

_____ [2]

13 A sum of money was divided between Ann and Brian in the ratio 3 : 7

Ann received £30 less than Brian.

How much did each person receive?

Answer Ann £ _____

Brian £ _____ [3]

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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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