



Rewarding Learning

General Certificate of Secondary Education
January 2013

--	--	--	--	--

Candidate Number

--	--	--	--

StudentBounty.com

Mathematics

Unit T5 Paper 2
(With calculator)
Foundation Tier



GMT52

[GMT52]

TUESDAY 15 JANUARY 3.00 pm–4.00 pm

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 box, around each page, on blank pages or tracing paper.

Complete in blue or black ink only. **Do not write in pencil or with a gel pen.**

Answer **all sixteen** 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 7 and 11.**

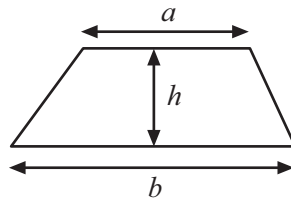
You should have a calculator, ruler, compasses and a protractor.

The Formula Sheet is overleaf.

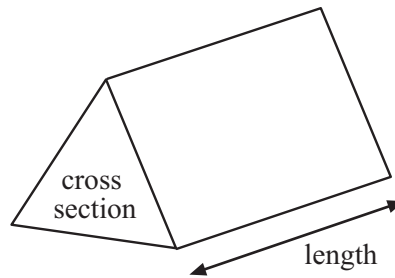


Formula Sheet

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



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



1 (a) Jack collects toy cars of different colours.

In a box he has 3 red, 2 yellow and 1 blue car.
He takes a car at random.

Which colour of car is he most likely to take?

Answer _____ [1]

(b) A bag contains cards numbered 1 to 20
A card is taken at random from the bag.

Which type of number, odd, even or square is least likely to be taken?
Explain your answer.

Answer _____ because _____ [2]

Examiner Only	
Marks	Remark
Total Question 1	

2 Impossible Unlikely Evens Likely Certain

Use words from above to describe the chance of each of the following happening.

(a) A teenager will buy a house. _____ [1]

(b) The day after Monday is Thursday. _____ [1]

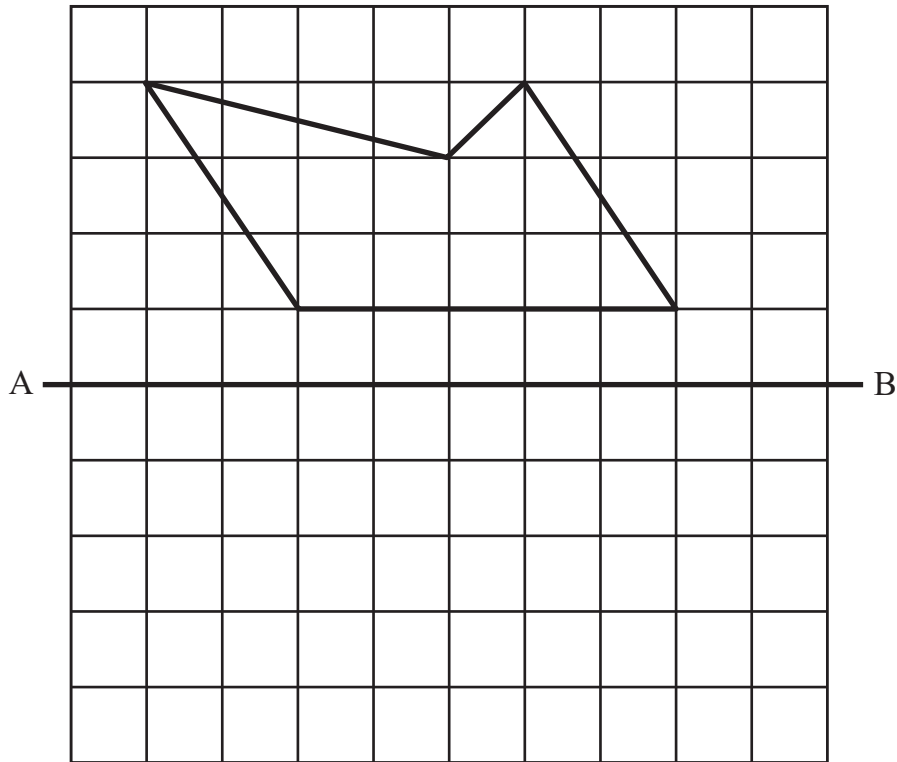
(c) A referee in a football final will have a whistle. _____ [1]

Total Question 2	

[Turn over



3 Draw the image of the shape after a reflection in the line AB.



[2]

Examiner Only

Marks Remark

Total Question 3

4 Place each of these under the correct heading in the table.

$2x + 5$

$y = 2x + 5$

$2x + 5 = 12$

Equation	Expression	Formula

[2]

Total Question 4



5 (a) Which **metric** unit is used to measure

(i) the weight of a large truck, Answer _____ [1]

(ii) the height of the Eiffel Tower, Answer _____ [1]

(iii) the volume of heating oil in a house tank, Answer _____ [1]

(iv) the mass of flour in a cake recipe? Answer _____ [1]

(b) A Quarterback in American football weighs 209 lbs.

How many kg is this?

Answer _____ kg [2]

Examiner Only

Marks

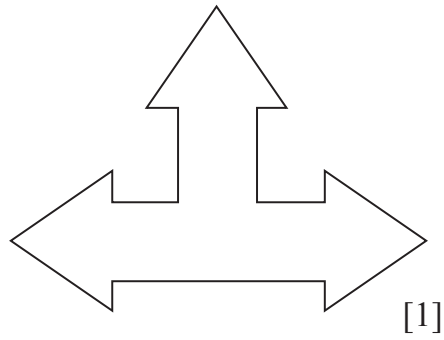
Remark

Total Question 5

[Turn over

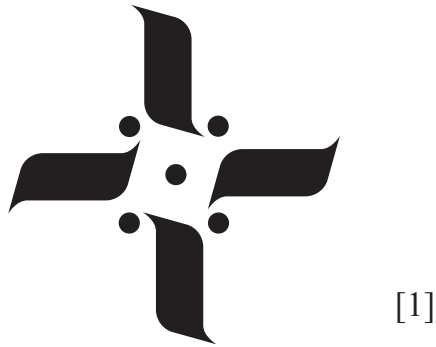


6 (a) Draw on this shape any lines of symmetry.

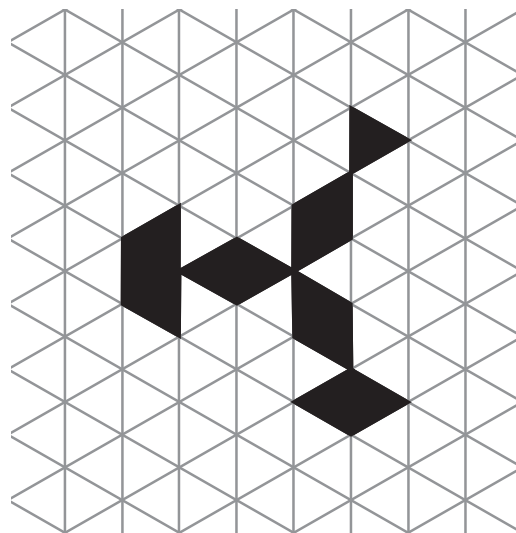


(b) (i) Complete the following:

This shape has rotational symmetry of order _____.



(ii) Shade 3 more triangles on the shape below so that the pattern will have rotational symmetry of order 3.



[2]

Examiner Only

Marks Remark

Examiner Only	
Marks	Remark

Total Question 6

--	--



Quality of written communication will be assessed in this question.

Show your working.

7 The speed limit on the motorway in Northern Ireland is 70 mph.

Jean Pierre is on holiday in Northern Ireland and his car's speedometer shows its speed in km/h.

Is he breaking the speed limit?

Show all your working.

Answer _____

because _____

_____ [3]

Examiner Only

Marks

Remark

Total Question 7

8 Put brackets in the following statements to make them true.

(a) $8 \times 3 + 6 - 4 = 68$ [1]

(b) $8 - 1 \times 3 + 5 = 56$ [1]

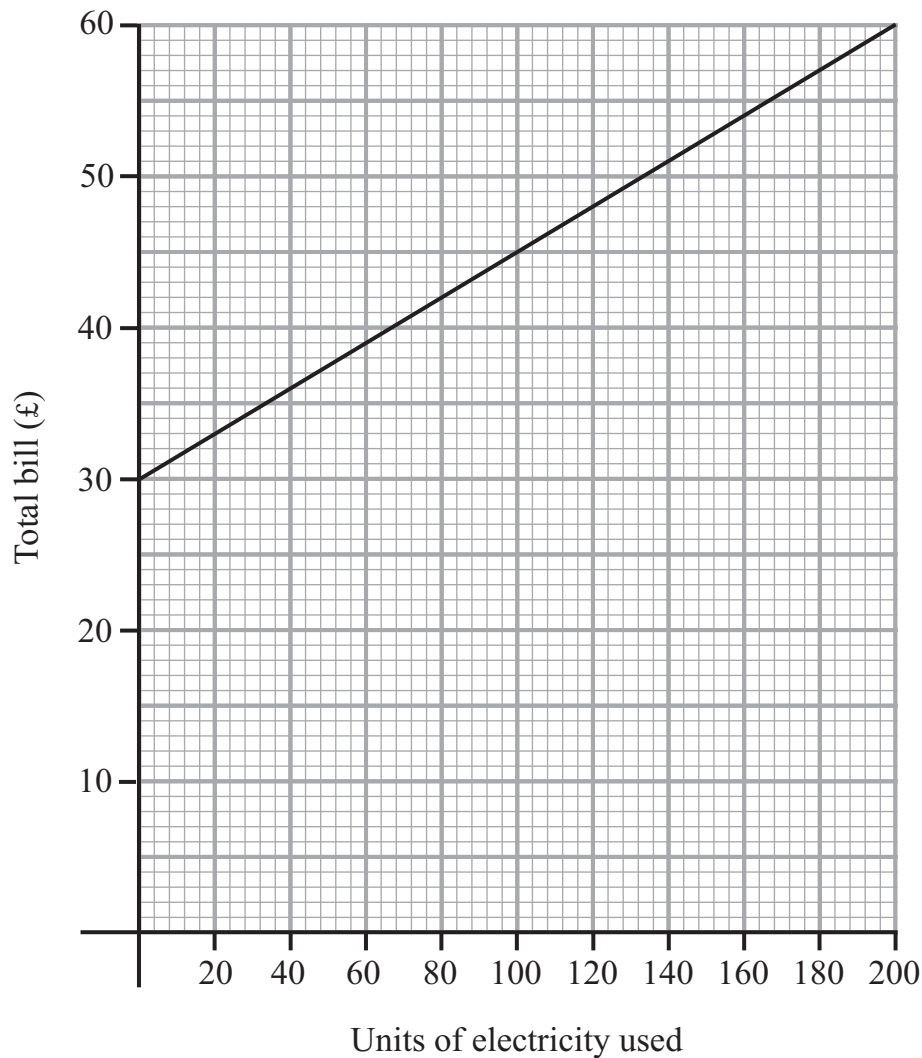
Total Question 8



9 An electricity bill is calculated from a formula.

$$\text{Total bill} = \text{Fixed charge} + \text{cost of units of electricity used}$$

The graph shows how the bill varies for units of electricity used.



(a) Kevin uses 120 units of electricity. How much is his bill?

Answer £ _____ [1]

(b) Kate's bill was £52.50
How many units of electricity did she use?

Answer _____ units [1]

Examiner Only	
Marks	Remark



(c) How much is the fixed charge?

Answer £ _____ [1]

(d) Work out the charge for one unit of electricity.

Answer _____ [2]

Examiner Only

Marks Remark

Total Question 9

[Turn over



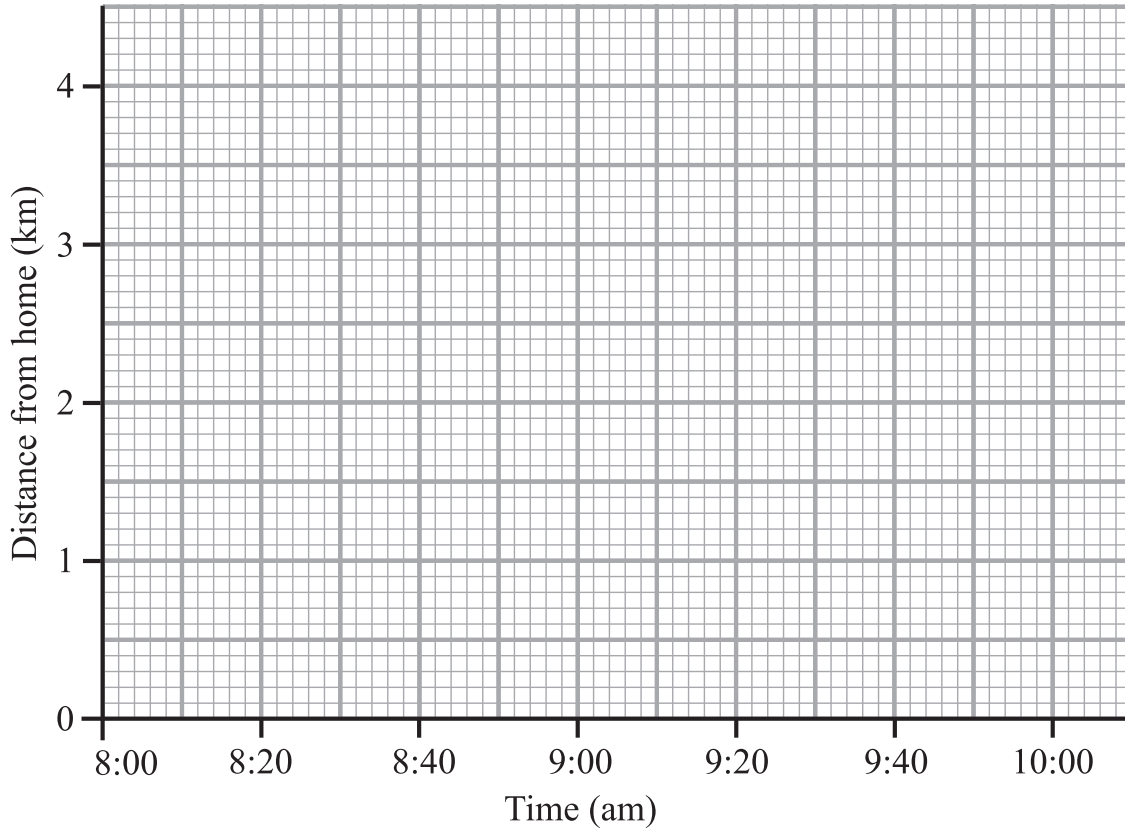
10 Jane walked $2\frac{1}{2}$ km from home to school on Friday.

She left home at 8.20 am and walked to the shop 1 km away. It took her 20 minutes.

She waited for 10 minutes at the shop to meet a friend.

She then continued her journey to school, walking at 3 km/hr.

Show Jane's journey on the travel graph below.



[3]

Examiner Only

Marks Remark

Total Question 10



Quality of written communication will be assessed in this question.

Show your working.

- 11** A sports competition was held in London and Paris. The prize money in London was £140 000 and the prize money in Paris was €160 000 (£1 = €1.15)

Which city paid out the most prize money?

You must show working.

Answer _____ [3]

Examiner Only

Marks Remark

Total Question 11

[Turn over



12 Nathan earns £36 000 per year. His tax free allowance is £8 000
 He pays 26% of the remaining salary in tax.
 How much of his salary is left after tax has been deducted?

Answer £ _____ [3]

Examiner Only

Marks Remark

Total Question 12

13 A factory machine fills bags of chocolate minibars. Each bag should contain 18 minibars.

Leanne tests the machine's accuracy by selecting 100 bags at random and counting the number of minibars.
 The table shows her results.

Number of minibars	Less than 18	Exactly 18	More than 18
Number of Bags	8	76	16

A bag is then chosen at random from the 100

(a) What is the probability that it contains at least 18 minibars?

Answer _____ [2]

(b) What is the probability that it will **not** contain exactly 18 minibars?

Answer _____ [2]

Total Question 13



- 14 Audrey, Becks and Clare invest money in a business in the ratio 3:4:5
 Audrey invests £5400
 How much do Becks and Clare each invest?

Answer Becks £ _____

Clare £ _____ [2]

Examiner Only

Marks	Remark
Total Question 14	

- 15 There are 480 boys and 560 girls in Digby High School.
 The probability that a boy has brown hair is 0.6
 The probability that a girl has brown hair is 0.45
 How many pupils in the school have brown hair?

Answer _____ [3]

Total Question 15

- 16 Rewrite $k = ax - b$ to make x the subject.

Answer $x =$ _____ [2]

Total Question 16



THIS IS THE END OF THE QUESTION PAPER





DO NOT WRITE ON THIS PAGE



DO NOT WRITE ON THIS PAGE

For Examiner's use only	
Question Number	Marks
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Total Marks	
--------------------	--

Examiner Number

Permission to reproduce all copyright material has been applied for.
In some cases, efforts to contact copyright holders may have been unsuccessful and CCEA will be happy to rectify any omissions of acknowledgement in future if notified.

