Rewarding Learning

Centre Number

Candidate Number

General Certificate of Secondary Education
2012

Mathematics

Unit T5 Paper 2
(With calculator)
Foundation Tier

[GMT52]

GMT52

MONDAY 11 JUNE 2.45 pm–3.45 pm

TIME

1 hour.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.
Write your answers in the spaces provided in the question 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.

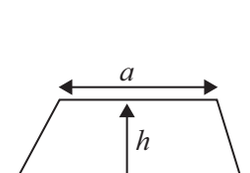
INFORMATION FOR CANDIDATES

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 2, 3 and 7**.
You should have a calculator, ruler, compasses and protractor.
The Formula Sheet is overleaf.

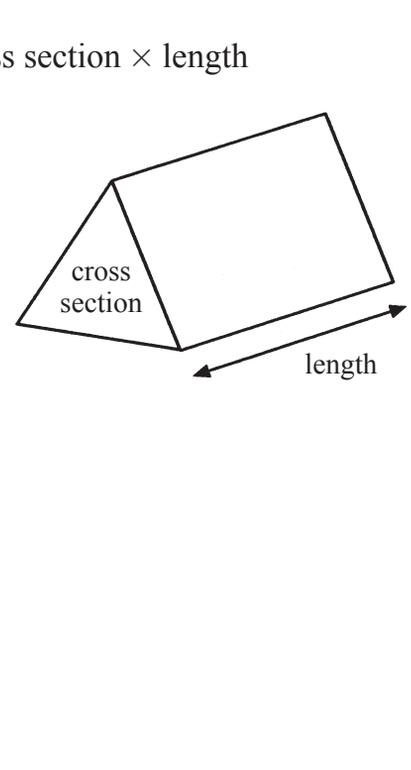
7414

Formula Sheet

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



Volume of prism = area of cross section × length



Answer **all** questions.

Examiner Only	
Marks	Remark

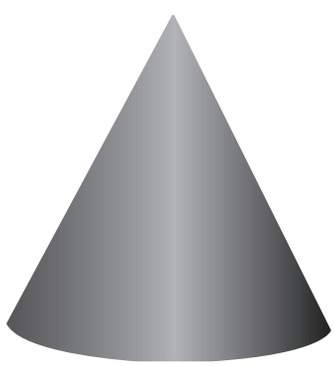
1 Choose from the following to name the solids below.

Cylinder	**Cone**	**Cube**	**Sphere**
Triangular Prism		**Cuboid**	**Pyramid**

(a)

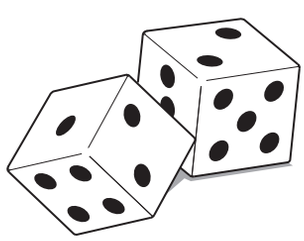
Answer _____ [1]

(b)



Answer _____ [1]

(c)



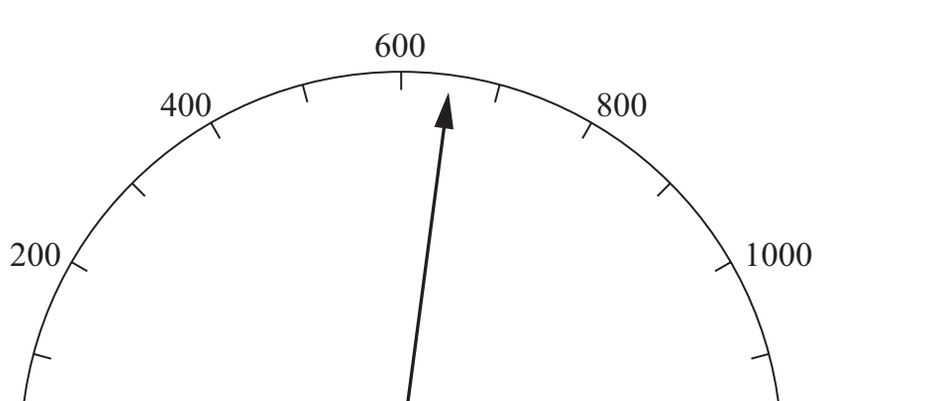
Answer _____ [1]

Total Question 1

Quality of written communication will be assessed in this question.

Examiner Only	
Marks	Remark

2



The gauge above shows the amount of heating oil that Brian had in his oil tank on 1st January.

(a) How much oil was in the tank?

Answer _____ litres [1]

Brian uses 140 litres of oil per month.

(b) Is there enough oil in the tank to last until 30th April?

Explain your answer.

Answer _____ because _____

_____ [2]

A delivery of 900 litres of oil is made to Brian on 1st May.

(c) Show how much oil is in the tank after the delivery on 1st May by marking it clearly on the gauge above. [2]

Total Question 2

Quality of written communication will be assessed in this question.

Examiner Only	
Marks	Remark

3 Scaffolding can be hired.

The hire charge is calculated using this formula:

> Fifty-five pounds per day plus a fixed charge of eighty pounds

(a) Is the cost of hiring the scaffolding for 10 days twice the cost of hiring the scaffolding for 5 days?

Explain your answer.

Answer _____ because _____

_____ [2]

(b) A builder paid £850 altogether to hire some scaffolding.

For how many days did he hire the scaffolding?

Answer _____ days [2]

Total Question 3

[Turn over

4 **(a)** In the following sentences fill in appropriate metric units.

(i) Lengths can be measured in **feet** or _____ [1]

(ii) Milk can be bought in **pints** or _____ [1]

(iii) Sugar can be bought in **pounds** or _____ [1]

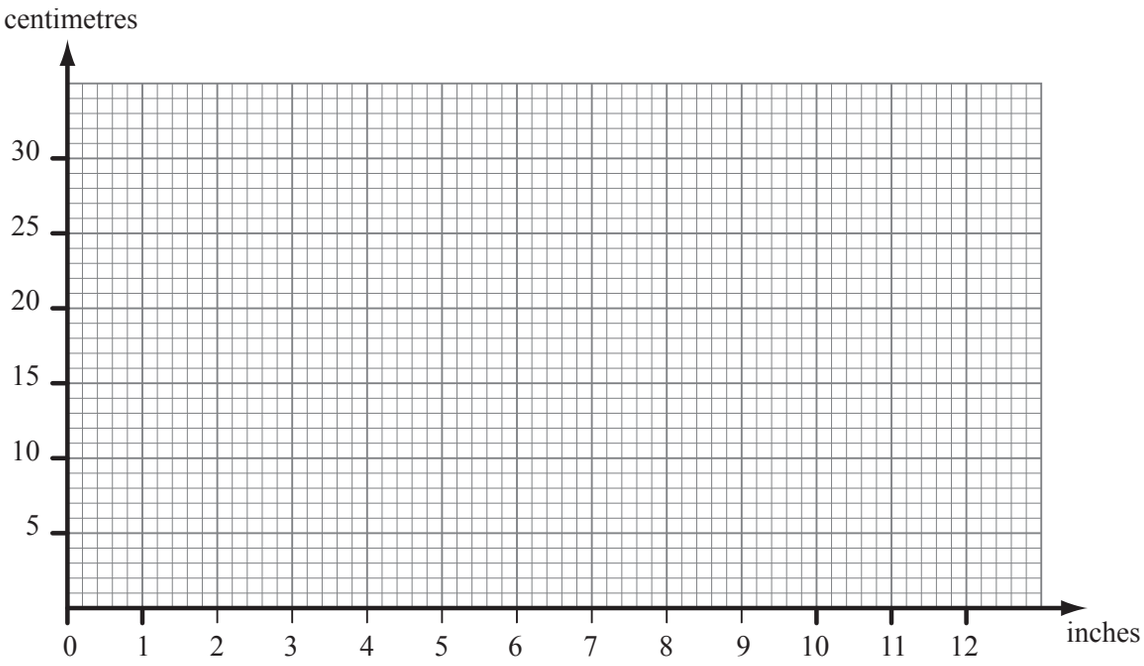
(b) The distance between two towns is 48 kilometres.

How many miles is this?

Answer _____ miles [2]

Examiner Only	
Marks	Remark
Total Question 4	

5 **(a)** Four inches is approximately equal to 10 centimetres. Use this information to draw a conversion graph.



[1]

(b) Use your graph to change

(i) 22 centimetres to inches,

Answer _____ inches [1]

(ii) 5 inches to centimetres.

Answer _____ cm [1]

Examiner Only	
Marks	Remark
Total Question 5	

[Turn over

6 What type of triangle has

(a) three lines of symmetry?

Answer _____ [1]

(b) only one line of symmetry?

Answer _____ [1]

Examiner Only	
Marks	Remark
Total Question 6	

Quality of written communication will be assessed in this question.

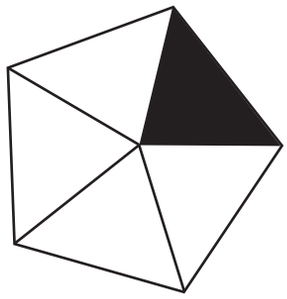
Examiner Only	
Marks	Remark

7 (a) Arrange the events, A, B and C, in order of likelihood from **least** likely to **most** likely.

A Getting a tail on one throw of a fair coin.

B Getting a 2 on one throw of a fair dice.

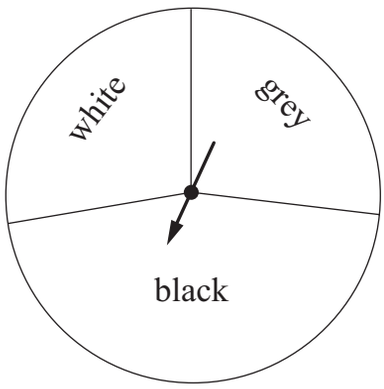
C Getting black on one spin of this spinner



least likely most likely

Answer _____, _____, _____ [2]

(b)



This spinner has 3 possible outcomes – white, grey or black.

Janet says that 1 of the 3 outcomes is black, so the probability that the arrow will stop on black is $\frac{1}{3}$.

Is Janet correct? Explain your answer.

Answer _____ because _____

_____ [2]

Total Question 7

8 Write

(a) 0.00592 to 4 decimal places,

Answer _____ [1]

(b) 0.09502 to 2 decimal places.

Answer _____ [1]

Examiner Only	
Marks	Remark
Total Question 8	

9 While Peter was on a visit to India he bought a camera for 6000 rupees.

The exchange rate at the time was £1 = 63.45 rupees.

Work out the cost of the camera in pounds.

Answer £ _____ [2]

Examiner Only	
Marks	Remark
Total Question 9	

[Turn over

10 **(a)** Using only the symbols + and ×, insert one into each box so that the calculation will be correct.

6 ☐ 8 ☐ 10 = 58 [1]

(b) Using symbols from ×, ÷, + or −, insert one into each box so that the calculation will be correct.

You may use each symbol only once.

4 ☐ 4 ☐ 7 ☐ 2 = 30 [2]

Examiner Only	
Marks	Remark
Total Question 10	

11 Melissa says "Five times a number is always bigger than the number".

Give an example to show she is wrong.

[2]

Examiner Only	
Marks	Remark
Total Question 11	

[Turn over

12 75 grams of flour and 135 millilitres of milk are needed to make 12 biscuits.

Examiner Only	
Marks	Remark

(a) How much flour is needed to make 30 biscuits?

Answer _____ grams [1]

(b) How many biscuits can be made with 175 grams of flour, provided there is enough milk?

Answer _____ biscuits [1]

(c) A number of biscuits are made using 300 grams of flour.

How much milk is needed?

Answer _____ millilitres [1]

Total Question 12

13 **(a)** Make y the subject in the following equation and simplify the answer.

$$5x - 7 = 5 - y$$

Answer $y =$ _____ [2]

(b) Which of the statements below describes the number $3n + 1$, where n represents any whole number? Explain your answer.

"always even" **"always odd"** **"could be even or odd"**

Answer _____

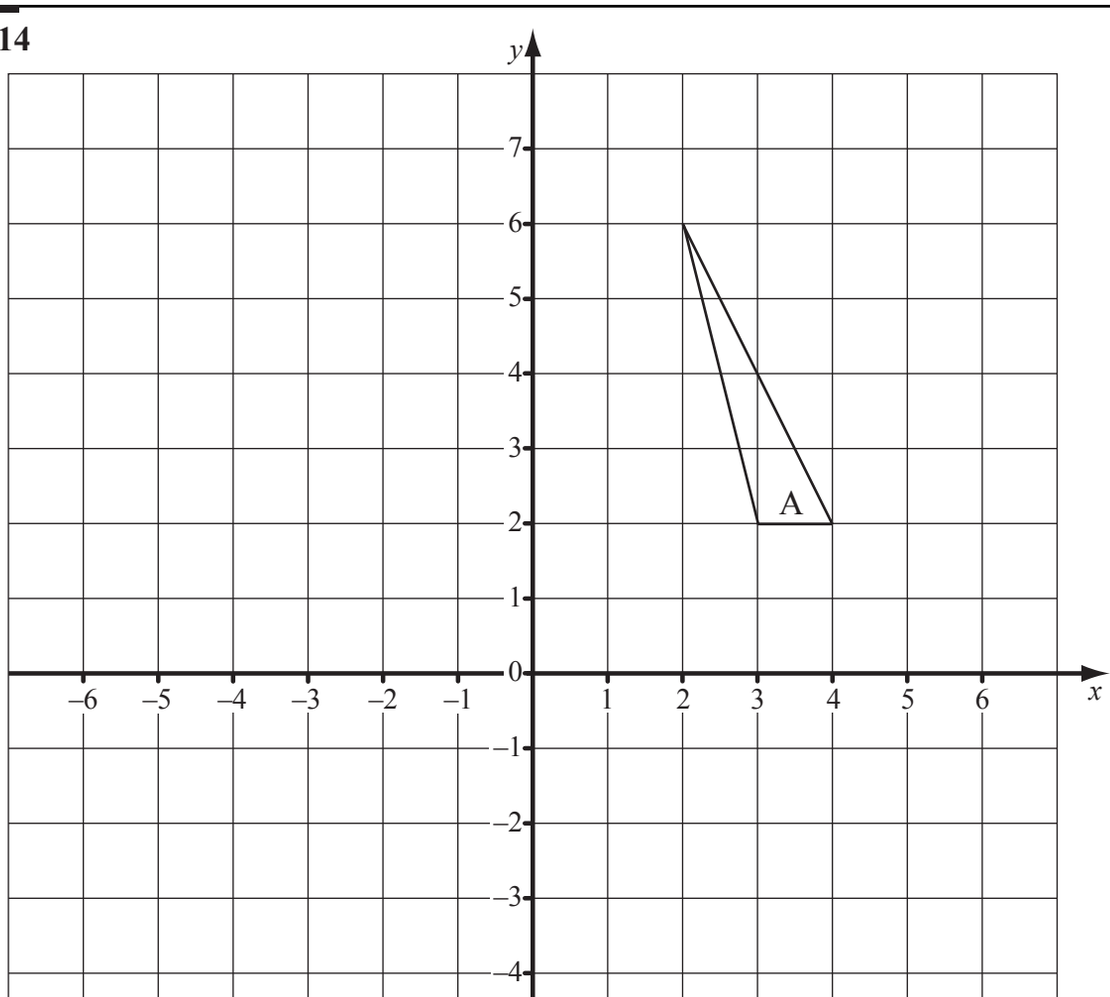
because _____

_____ [2]

Examiner Only	
Marks	Remark
Total Question 13	

[Turn over

14



Examiner Only	
Marks	Remark
Total Question 14	

(a) Draw the image of triangle A after a translation $\begin{pmatrix} -6 \\ -2 \end{pmatrix}$. Label it B. [2]

(b) Draw the image of triangle A after a rotation of 90° clockwise about the point (−1, 0). Label it C. [2]

15 Solve $8x < 6 + 3x$

Answer _____ [2]

Examiner Only	
Marks	Remark
Total Question 15	

16 Simplify

(a) $a^4 \times a^4$

Answer _____ [1]

(b) $\dfrac{b \times b^5}{b^2}$

Answer _____ [1]

Examiner Only	
Marks	Remark
Total Question 16	

THIS IS THE END OF THE QUESTION PAPER

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For Examiner's use only	
Question Number	**Marks**
1	
2	
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Total Marks	

Examiner Number