Rewarding Learning

Centre Number

Candidate Number

General Certificate of Secondary Education
January 2016

Mathematics

Unit T5 Paper 2
(With calculator)
Foundation Tier

ML

[GMT52]
WEDNESDAY 13 JANUARY, 10.45 am–11.45 am

TIME

1 hour, plus your additional time allowance.

INSTRUCTIONS TO CANDIDATES

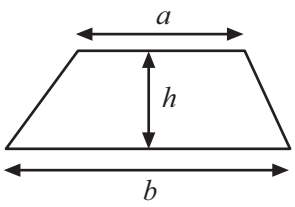
Write your Centre Number and Candidate Number in the spaces provided at the top of this page.
You must answer the questions in the spaces provided.
Do not write outside the boxed area on each page, on blank pages or tracing paper.
Complete in blue or black ink only.
Answer **all sixteen** questions.
All 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

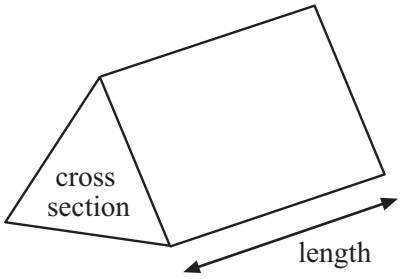
The total mark for this paper is 50.
Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.
Functional Elements will be assessed in this paper.
Quality of written communication will be assessed in Question **8**.
You should have a calculator, ruler, compasses and a protractor.
The Formula Sheet is on page 2.

Formula Sheet

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



Volume of prism = area of cross section × length



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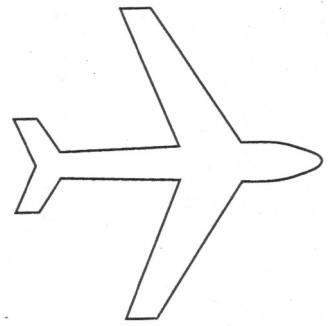
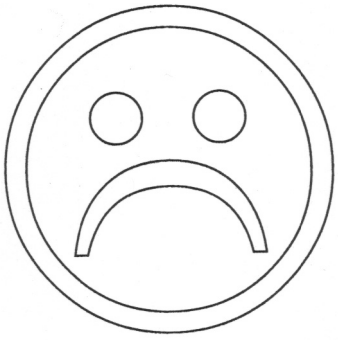
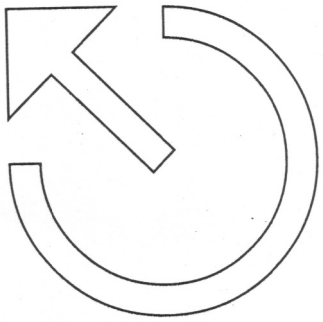
(Questions start overleaf)

1 For each of the shapes below draw a line of symmetry.







[3]

2 An imperial unit for measuring the speed of a car is miles per hour.

Write down an imperial unit for measuring

(a) the length of a pencil,

Answer _____ [1]

(b) the weight of an apple.

Answer _____ [1]

3 Here are some number cards.

3	1	4	2	1	4	1	2	1	4

The cards are turned over.

A card is taken at random.

(a) Which number is most likely to be taken?

Answer _____ [1]

(b) Which number is least likely to be taken?

Answer _____ [1]

(c) An even number is more likely to be taken than an odd number.

Is this statement True or False?

Answer _____ [1]

[Turn over

4 The total cost (£) of a car service is given by the formula

Total cost = cost of parts + hours worked × 25

(a) Don pays £240 for parts and it takes five hours to service his car.

Work out the total cost of his car service.

Answer £ _____ [2]

(b) Olive's car does not need any new parts but it takes $3\frac{1}{2}$ hours to service it.

What is the total cost of Olive's car service?

Answer £ _____ [1]

(c) Explain what the 25 in the formula stands for.

Answer _____ [1]

5 Gary buys a pack of three pens for £4.97

Calculate the cost of each pen.

Give your answer to the nearest penny.

Answer £ _____ [3]

6 The weight of a boxer is 240 lbs.

What is this weight in kilograms?

Answer _____ kg [2]

7 What is the name for a three-sided shape which has rotational symmetry of order 3?

Answer _____ [1]

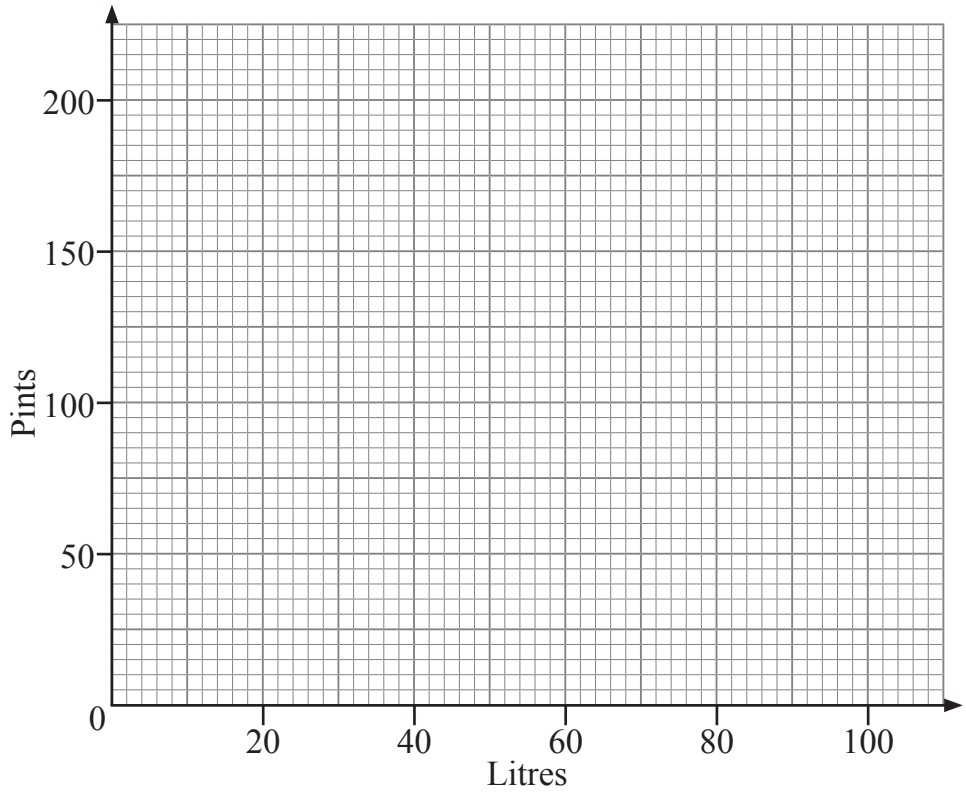
[Turn over

Quality of written communication will be assessed in this question.

8 Milk is sold in both litres and pints.

Litres	20	60	100
Pints	35	105	175

(a) Use the values in the table to draw the conversion graph on the grid below.



[3]

(b) Explain how to use your graph to convert 240 pints to litres, and write down the answer.

Answer _____ [2]

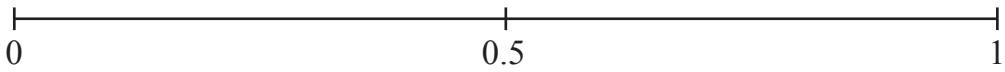
(c) Alice bought 75 litres of milk and Barbara bought 120 pints of milk.

Who bought more milk? Give a reason for your answer.

Answer _____ because _____

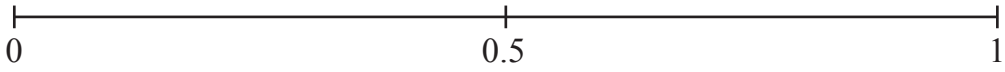
_____ [2]

9 **(a)** On the probability scale mark with a cross (✗) the probability that it will snow in Belfast in July.



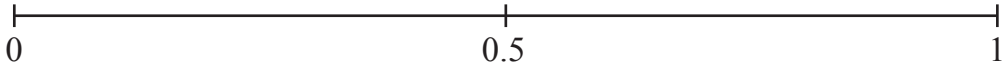
[1]

(b) On the probability scale mark with a cross (✗) the probability that it will rain in Belfast next year.



[1]

(c) On the probability scale mark with a cross (✗) the probability that you will get a tail when you toss a fair coin.



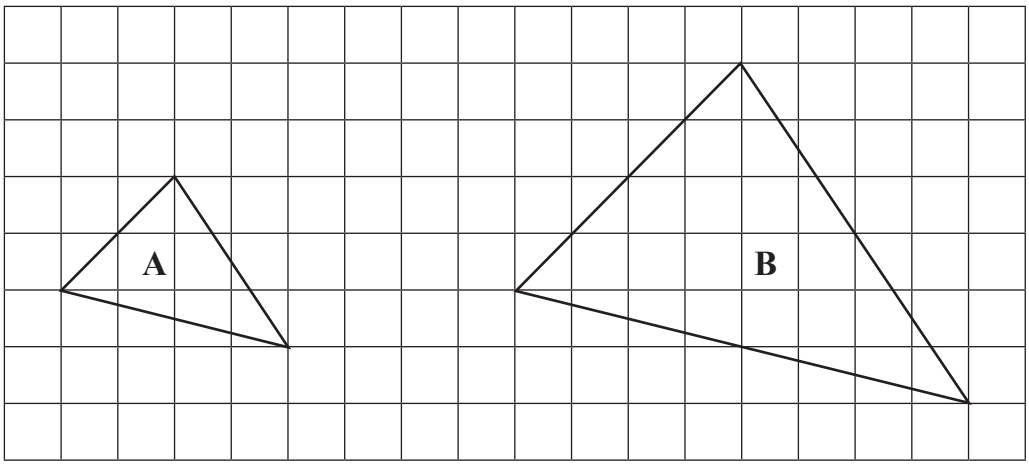
[1]

(d) The weather forecaster says that there is a 70% chance of rain tomorrow.

What is the probability that it will not rain tomorrow?

Answer _____ [1]

10 Triangle A is enlarged to give triangle B.



(a) What is the scale factor of the enlargement?

Answer _____ [1]

(b) How many times bigger is the area of triangle B than the area of triangle A?

Answer _____ [2]

[Turn over

11 Rosemary pays 27 euros for a bottle of perfume.

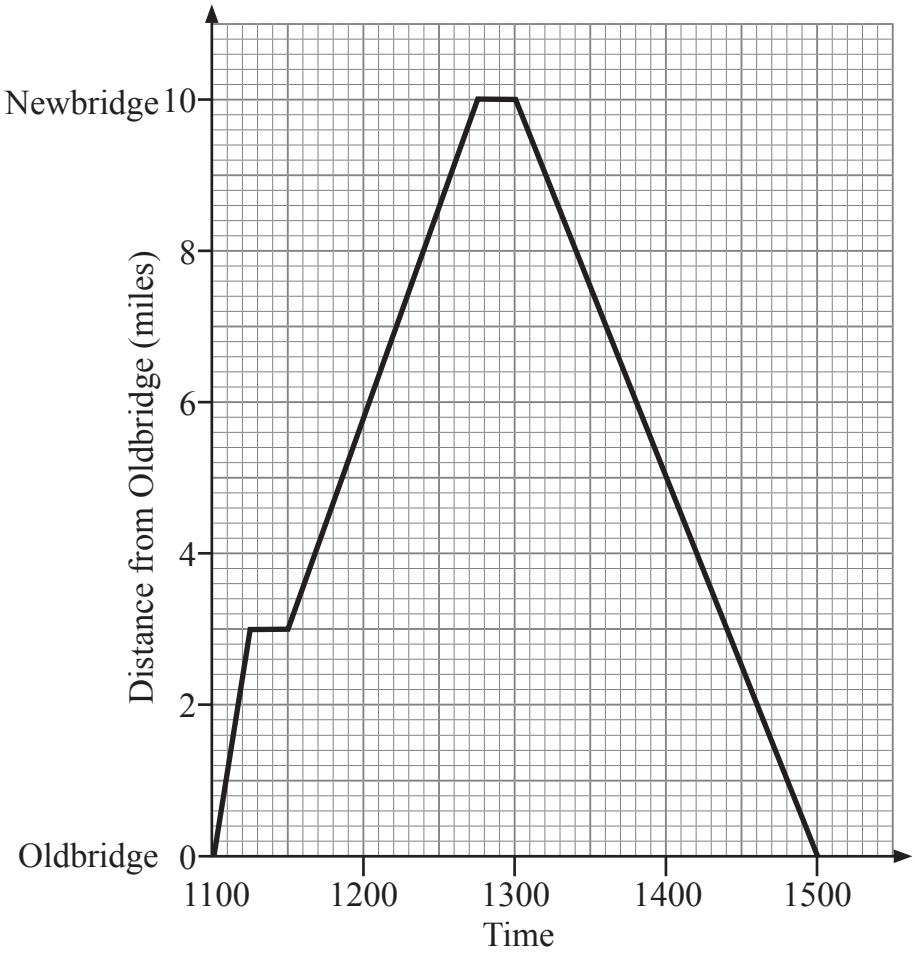
How much is this in pounds (£)?

£1 = €1.20

Answer £ _____ [2]

12 Harry goes for a run from Oldbridge to Newbridge and back.

His journey is shown on the graph below.



(a) What is Harry's average speed on the return journey from Newbridge to Oldbridge?

Answer _____ mph [2]

(b) Between which times is Harry running at his fastest average speed?

Answer _____ [1]

(c) Give a possible reason for the horizontal lines in the graph.

Answer _____ [1]

13 A bag contains only red, blue, yellow and white counters.

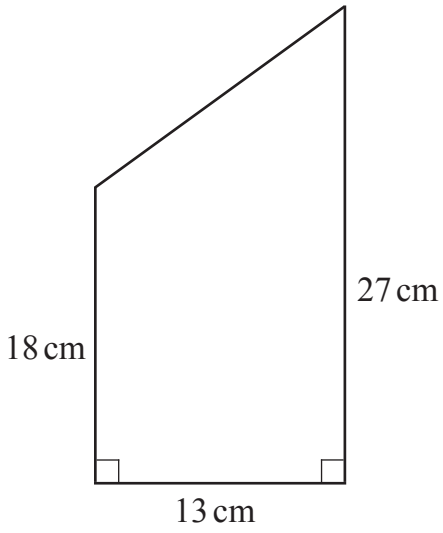
The table shows the probability of taking some of these colours from the bag at random.

Colour	red	blue	yellow	white
Probability	0.2	0.35		0.3

Work out the probability of taking a yellow counter from the bag.

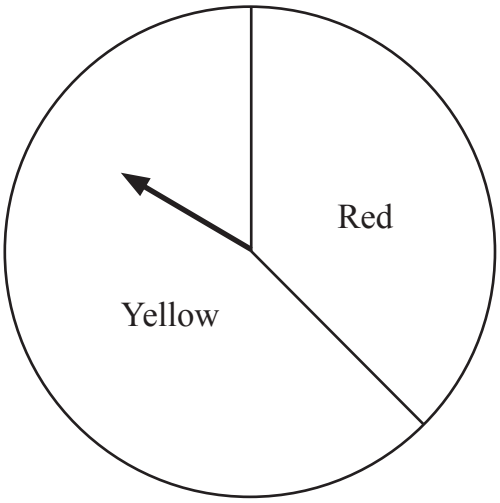
Answer _____ [2]

14 Find the area of this trapezium.



Answer _____ cm^2 [2]

15 A spinner has a red sector and a yellow sector as shown.



The arrow is spun 1000 times.

The table shows the relative frequency of the arrow landing on red after different numbers of spins.

Number of spins	Relative frequency of red
50	0.44
100	0.37
200	0.34
500	0.31
1000	0.32

In the first 200 spins, how many times had the arrow landed on red?

Answer _____ [2]

[Turn over

16 **(a)** Complete the table for $y = 2x^2 - 4x - 5$

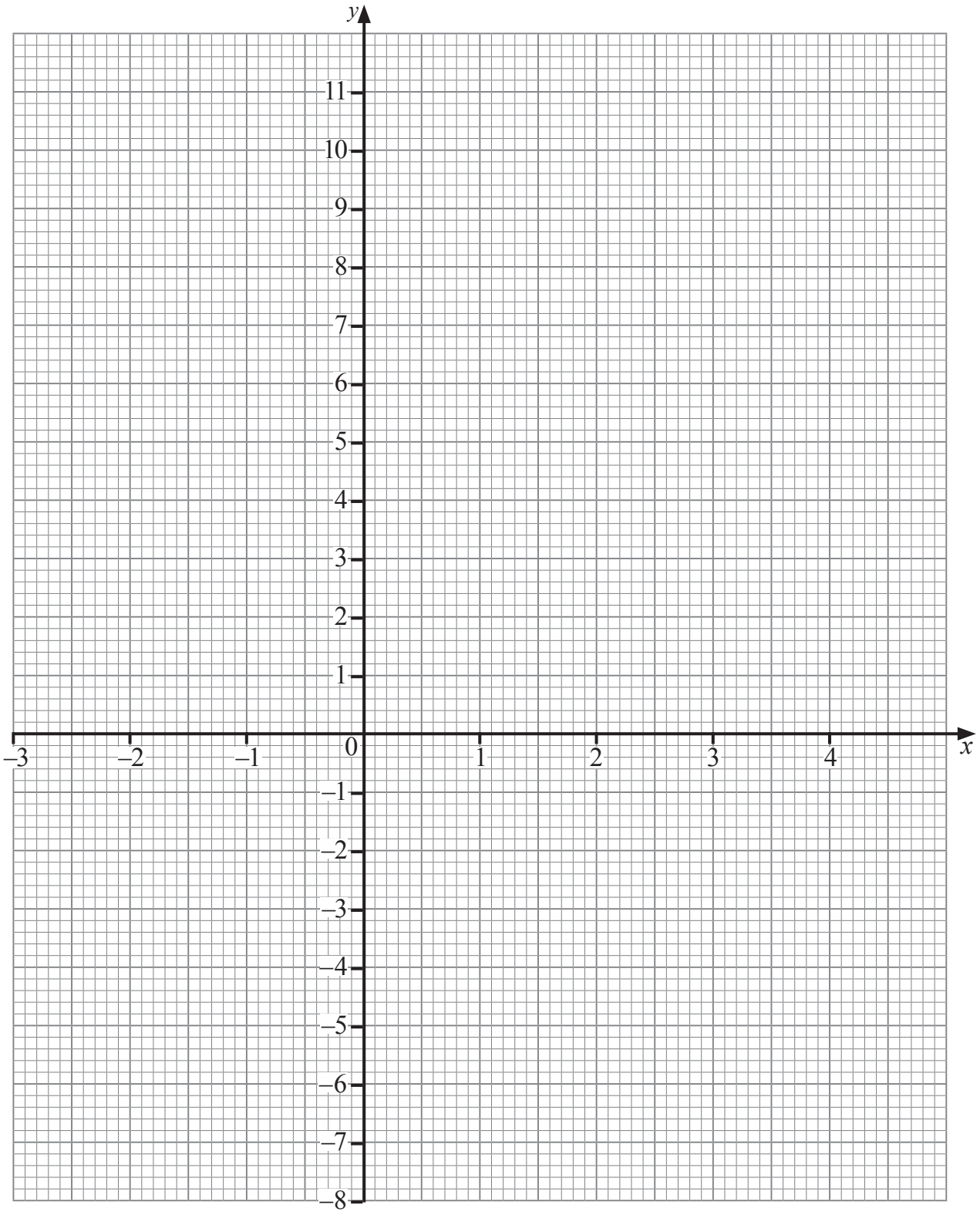
x	–2	–1	0	1	2	3	4
y		1	–5	–7		1	

[2]

(b) Draw the graph of $y = 2x^2 - 4x - 5$ for $x = -2$ to $x = 4$ on the opposite page. [2]

(c) Draw the line $y = -2$ and find the x values of the points of intersection.

Answer _____ [2]


y
x
11
10
9
8
7
6
5
4
3
2
1
0
–1
–2
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4

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For Examiner's use only	
Question Number	**Marks**
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Examiner Number

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