



Rewarding Learning

General Certificate of Secondary Education
2019

Centre Number

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Candidate Number

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Mathematics

Unit M5 Paper 1
(Non-Calculator)

Foundation Tier



[GMC51]

GMC51

THURSDAY 6 JUNE, 9.15am–10.15am

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 boxed area on each page, on blank pages or tracing paper.

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

Answer **all sixteen** questions.

All working should be clearly shown in the spaces provided. Marks may be awarded for partially correct solutions.

You **must not** 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.

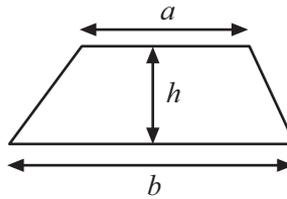
You should have a ruler, compasses and a protractor.

The Formula Sheet is on page 2.

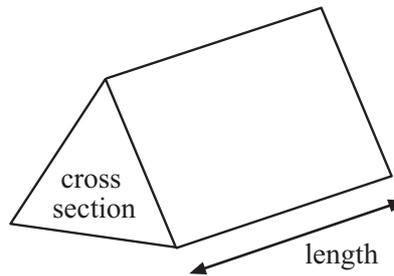


Formula Sheet

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



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



1 Michael wants to estimate his mobile phone charges.

- 19 minutes of calls at 3p per minute
- 21 texts at 5p per text
- 37 MB of data at 2p per MB

Estimate the total cost of the charges.

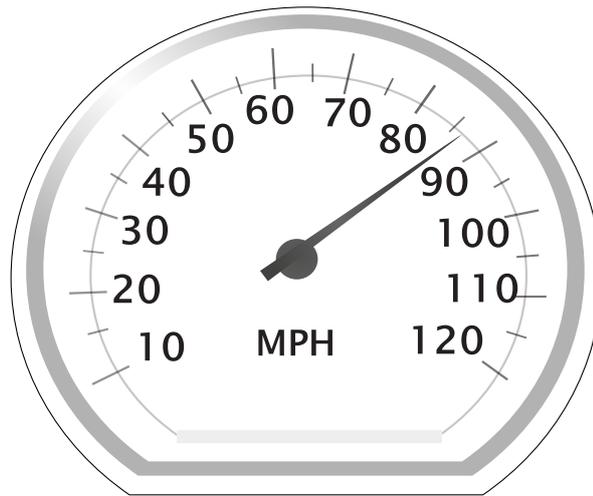
Show your method.

Answer £ _____ [3]

[Turn over

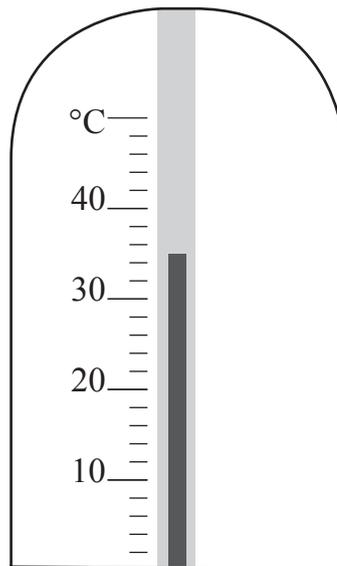


2 (a) What speed is shown?



Answer _____ mph [1]

(b) What temperature is shown?

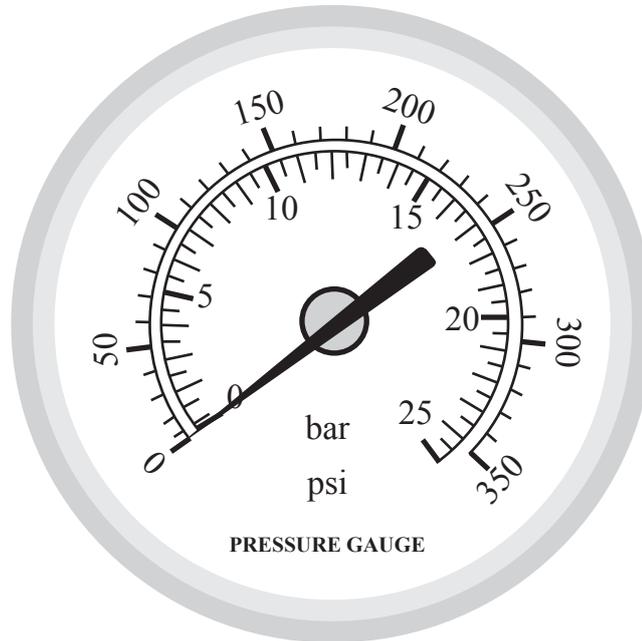


Answer _____ °C [1]



(c) Pressure can be measured below in psi or bar.

How many psi is 20 bar?



Answer _____ psi [1]

3 Part of a sequence of coordinates is shown.

(1, 19) (4, 15) (7, 11) (10, 7)

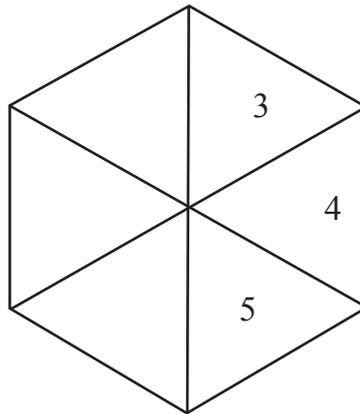
Write down the next term in the sequence.

Answer (_____, _____) [2]

[Turn over



- 4 A spinner with some blank parts is shown.



Write one number in each blank part so that the statements below are true.

The chance of landing on 3 is unlikely.

The chance of landing on 4 is evens.

There is more chance of landing on 5 than on 3

[2]





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(Questions continue overleaf)

[Turn over

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- 5 The distances in miles between some towns are shown.

	Belfast	Comber	Donaghadee	Newtownards
Bangor	14	9	7	5
Belfast		10	19	13
Comber			12	5
Donaghadee				8

- (a) Anna takes a taxi from Comber to Bangor.

The driver charges 90p per mile plus a £1.50 pick-up fee.

Anna thinks the cost of her fare will be about £10

Work out the cost and then say if you agree with Anna.

Show your working out.

Answer _____ because _____ [4]



(b) Anna buys these items for lunch.

Chicken Sandwich £2.95

Banana £0.89

Cup of coffee £1.75

Bottle of water £1.20

She pays with a £10 note.

She gets £2.21 change.

Is this change correct?

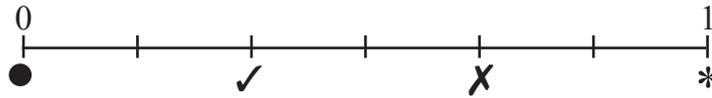
Show your working out.

Answer _____ because _____ [3]

[Turn over



6



One letter is taken at random from the word COMMON.

Which of ●, ✓, X, * shows the probability that the letter is

(a) M,

Answer _____ [1]

(b) T,

Answer _____ [1]

(c) a letter that appears twice in COMMON,

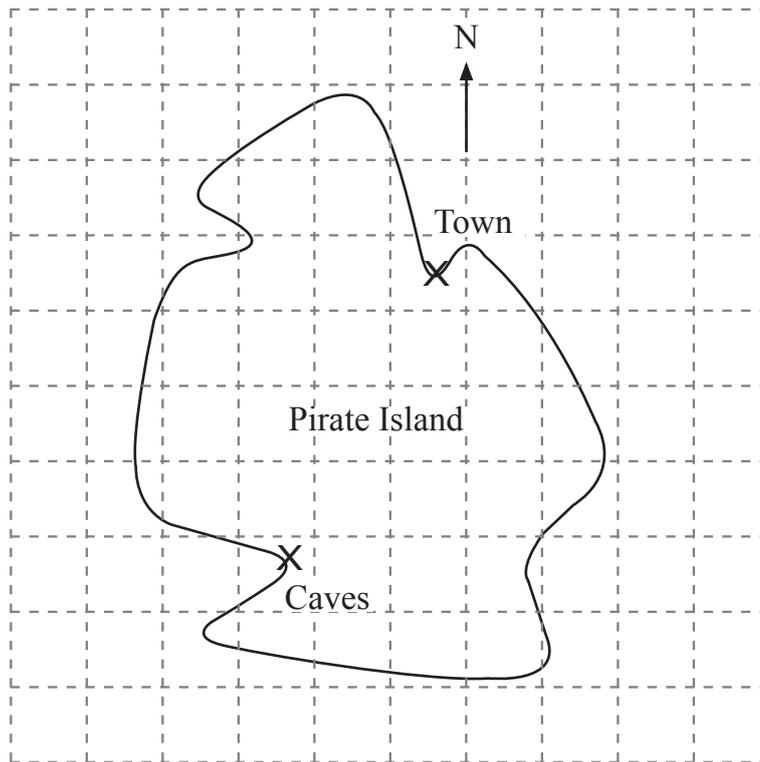
Answer _____ [1]

(d) a letter in the word MONOCLE?

Answer _____ [1]



7



SCALE
1 cm = 2 km

- (a) Use the scale to find the distance from the town to the caves.

Answer _____ km [2]

- (b) Mark, with an X, the position of the buried treasure which is 6 km due South of the town. [1]

- 8 (a) Fill in the next two terms of this sequence.

14, 13, 11, 8, , [2]

- (b) Write down the name of the numbers in the sequence below.

1, 8, 27, 64, ...

Answer _____ [1]

[Turn over

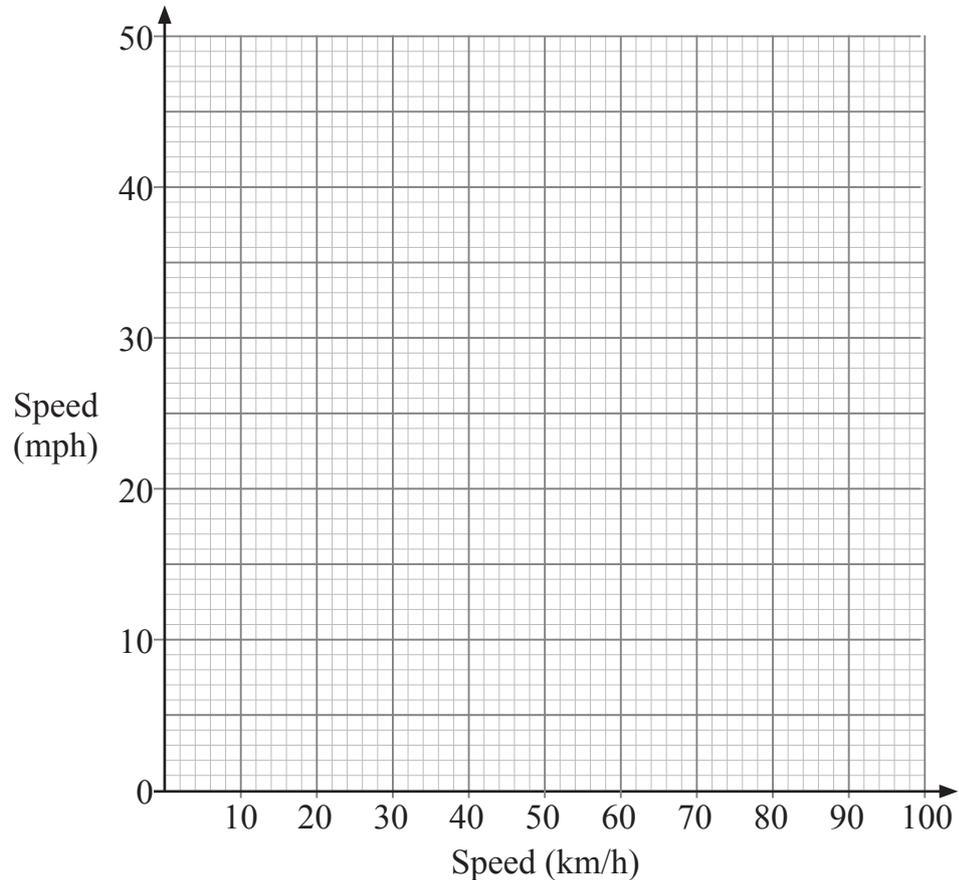
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9 Speed can be measured in kilometres per hour (km/h) or miles per hour (mph).

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

Speed (km/h)	0	40	80
Speed (mph)	0	25	50



[2]

(b) Jonah is travelling at 50 km/h.

Is he breaking the 30 mph speed limit?

You **must use** your graph to help explain your answer clearly.

Answer _____ because _____

[1]



10 Tom bought a full bag of coal.

After one week the bag was $\frac{2}{3}$ full.

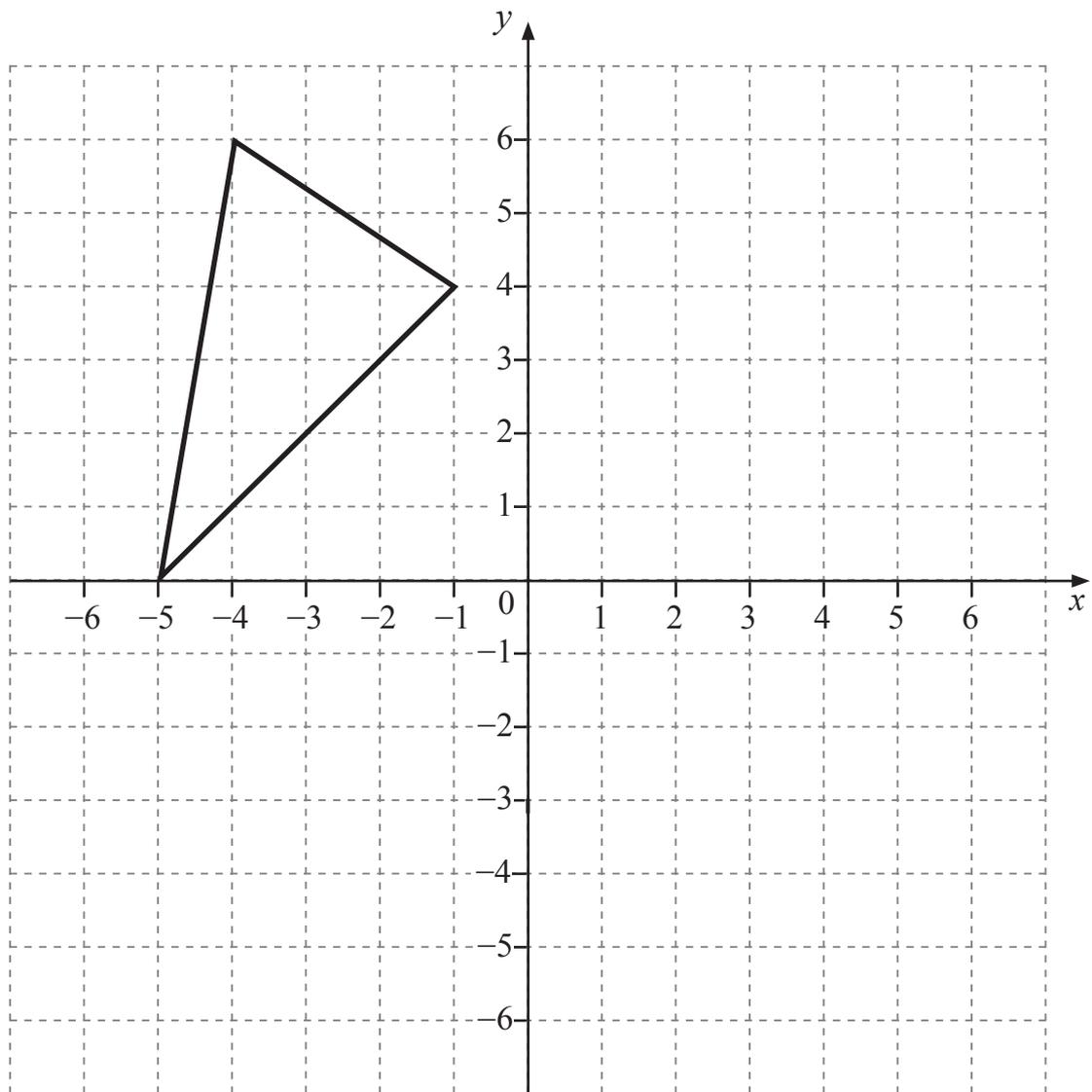
During the next week he used $\frac{1}{4}$ of the remaining coal.

What fraction was left in the bag?

Answer _____ [2]



11 Reflect the triangle shown in the y -axis.



[1]



12 (a) Calculate the size of angle x .

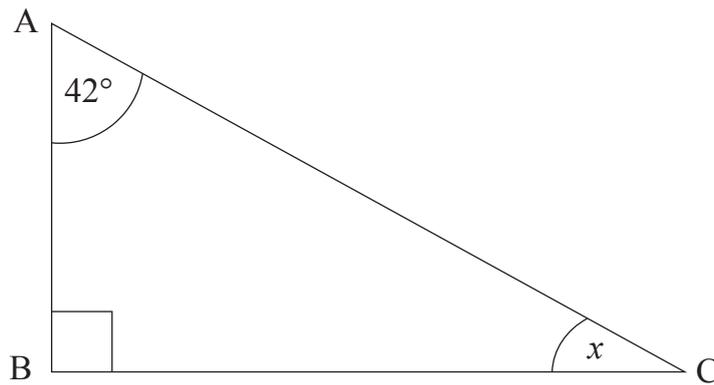
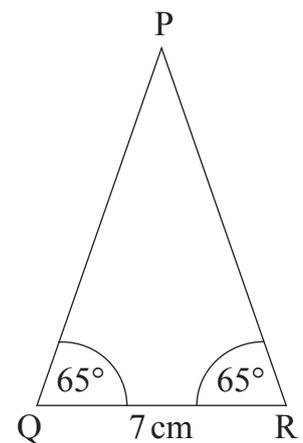


diagram not
drawn accurately

Answer _____ $^\circ$ [2]

(b) Make an accurate drawing of the triangle sketched below.



Q ×

[3]

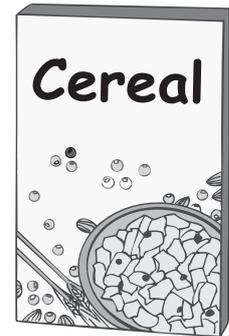
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13 A machine fills boxes of breakfast cereal.

Each box should weigh 375 g.

Jason takes 100 boxes and tests the accuracy of the machine by weighing them.



Weight (g)	Less than 375	Exactly 375	More than 375
Number of boxes	9	58	33

(a) What is the probability that one of the boxes taken by Jason weighs less than 375 g?

Answer _____ [1]

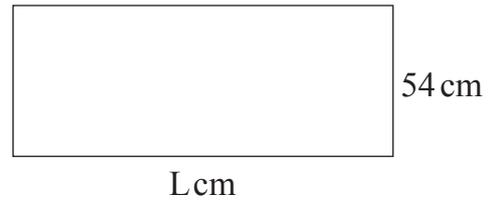
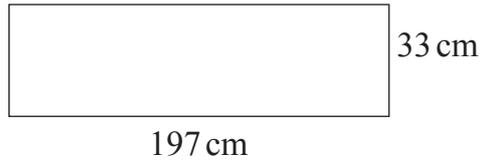
(b) The machine fills 5000 boxes.

Calculate the number of boxes you would expect to weigh less than 375 g.

Answer _____ [2]



14



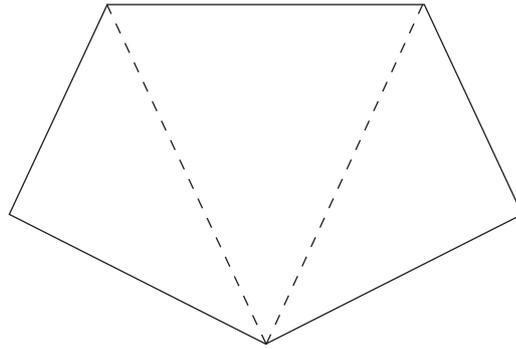
The two rectangles above have the same area.

Using estimation, work out an estimate for the length, L, of the second rectangle.

Answer L= _____ cm [2]



15



- (a) (i) What is the total of all the angles in the three triangles shown?

Answer _____ ° [1]

- (ii) What is the sum of the interior angles of a five-sided polygon?

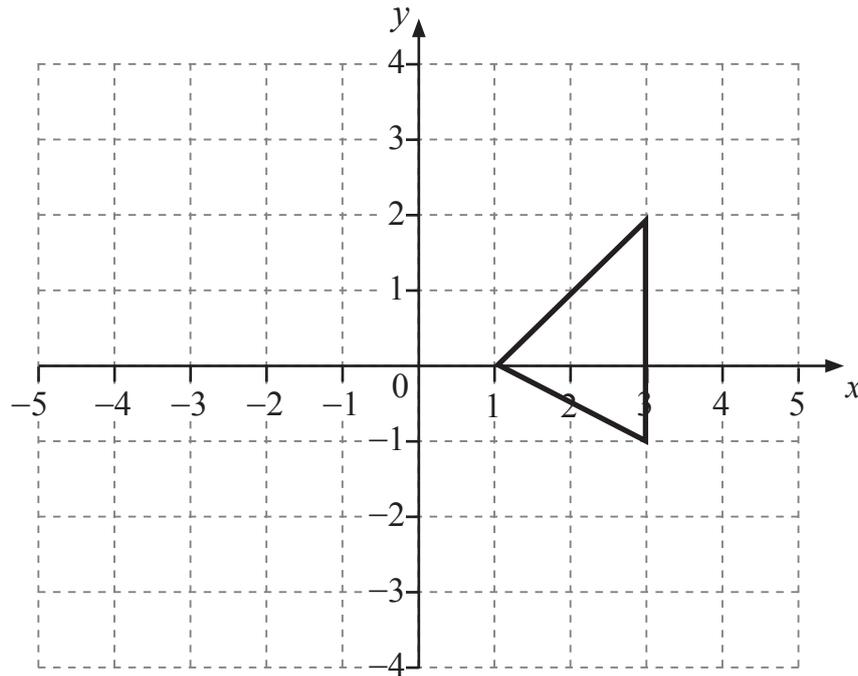
Answer _____ ° [1]

- (b) What is the sum of the interior angles of a seven-sided polygon?

Answer _____ ° [2]



16 Rotate the triangle 90° clockwise about the origin.



[3]

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	
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Examiner Number

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