Mock Grade 5

Maths Booklet 2

Paper 3H
Calculator

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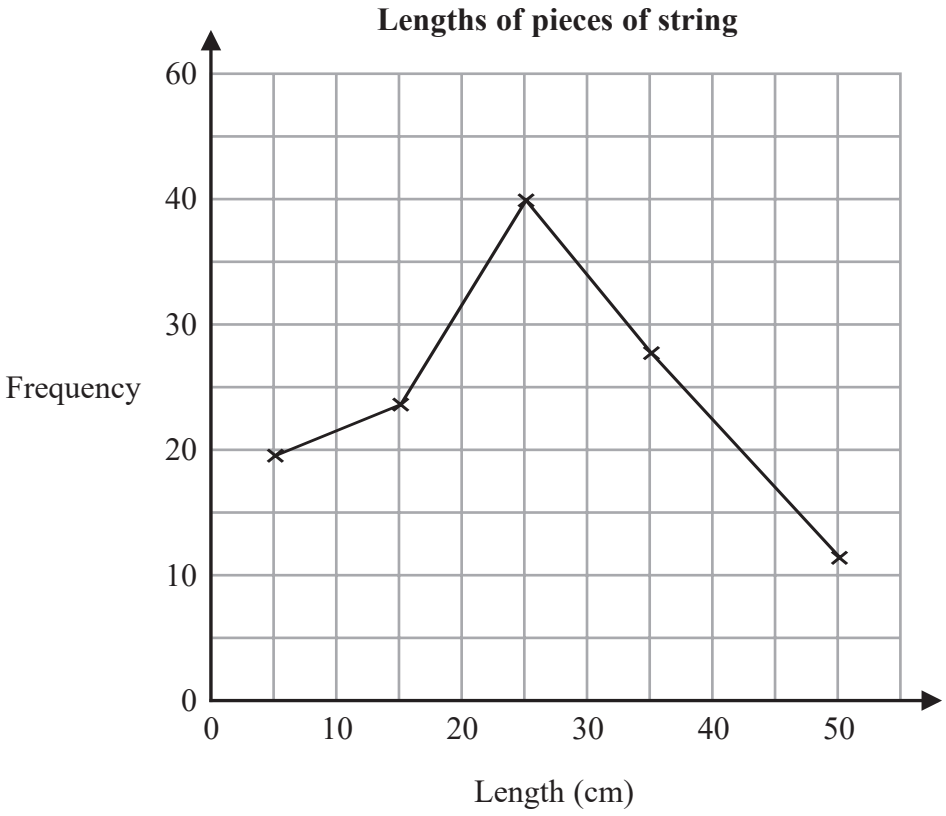
1 The table gives information about the lengths, in cm, of some pieces of string.

Length (t cm)	Frequency
$0 < t \leqslant 10$	20
$10 < t \leqslant 20$	24
$20 < t \leqslant 30$	50
$30 < t \leqslant 40$	27
$40 < t \leqslant 50$	11

Amos draws a frequency polygon for the information in the table.



Write down **two** mistakes that Amos has made.

1 .....

.....

2 .....

.....

(Total for Question 1 is 2 marks)

2 Jessica runs for 25 minutes at an average speed of 8 miles per hour.
She then runs for 16 minutes at an average speed of 10 miles per hour.

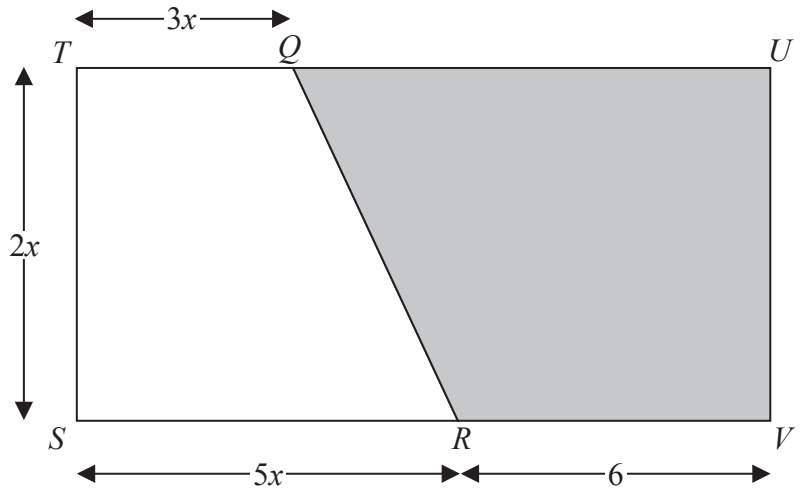
It takes Amy 36 minutes to run the same total distance that Jessica runs.

Work out Amy's average speed.
Give your answer in miles per hour.

..... miles per hour

(Total for Question 2 is 4 marks)

3 The diagram shows rectangle *STUV*.
TQU and *SRV* are straight lines.
All measurements are in cm.



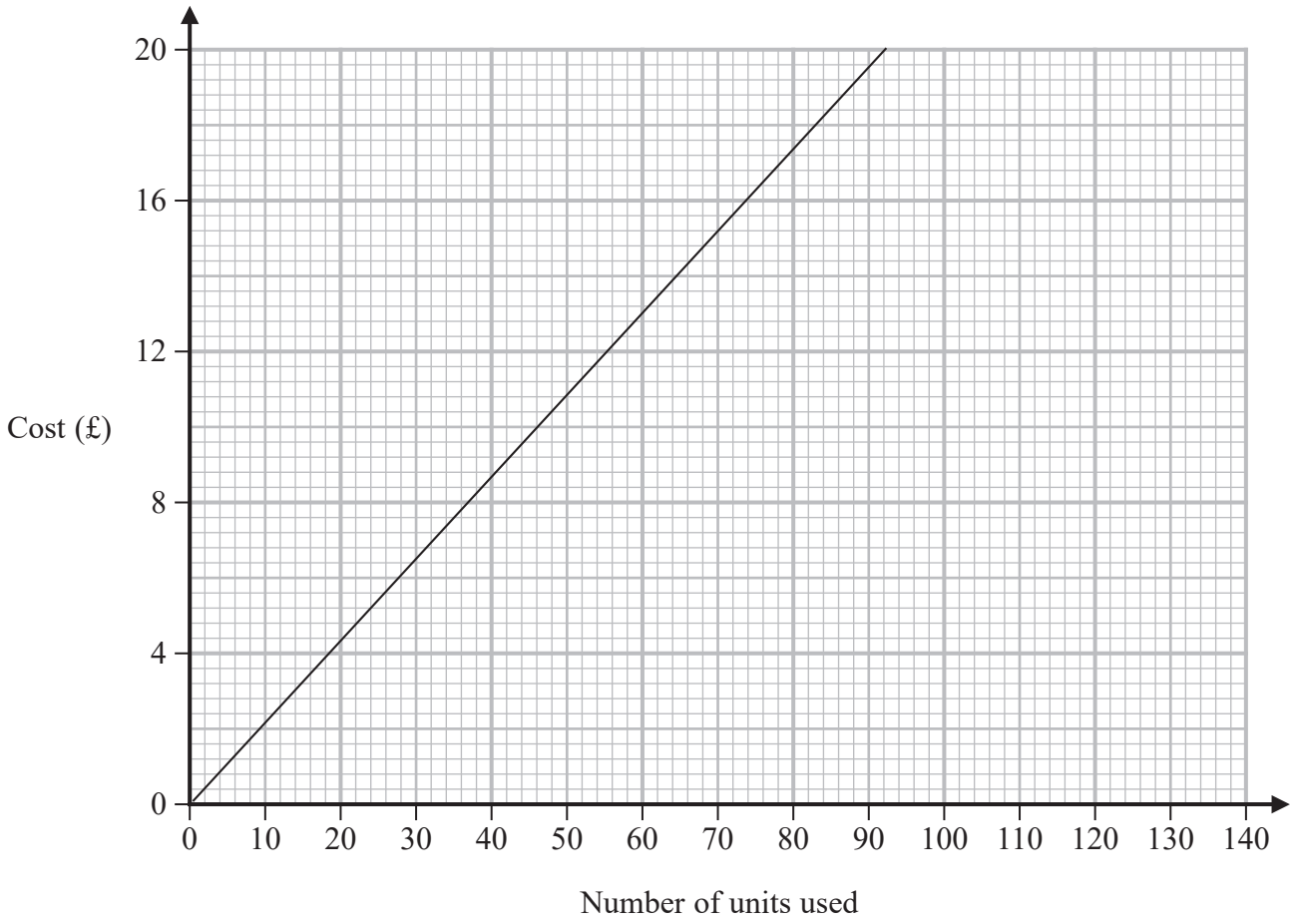
The area of trapezium *QUVR* is A cm^2

Show that $A = 2x^2 + 12x$

(Total for Question 3 is 3 marks)

4 An electricity company charges the same fixed amount for each unit of electricity used.

David uses this graph to work out the total cost of the electricity he has used.



(a) Work out the gradient of the straight line.

.....

(2)

(b) What does the gradient of this line represent?

.....

.....

.....

(1)

(Total for Question 4 is 3 marks)

5 Lara is a skier.

She completed a ski race in 1 minute 46 seconds.
The race was 482 m in length.

Lara assumes that her average speed is the same for each race.

(a) Using this assumption, work out how long Lara should take to complete a 964 m race.
Give your answer in minutes and seconds.

..... minutes ..... seconds

(3)

Lara's average speed actually increases the further she goes.

(b) How does this affect your answer to part (a)?

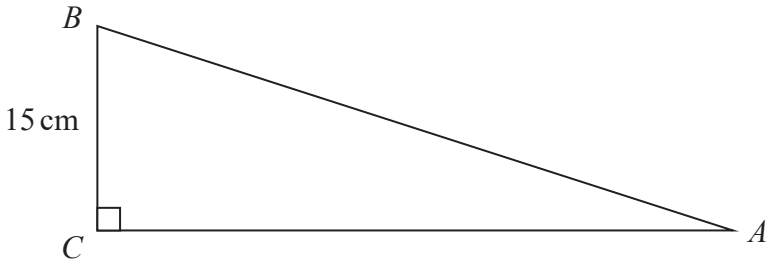
.....

.....

(1)

(Total for Question 5 is 4 marks)

6 ABC is a right-angled triangle.



$BC = 15$ cm.
Angle $C = 90°$

size of angle B : size of angle $A = 5 : 4$

Work out the length of AB.
Give your answer correct to 3 significant figures.

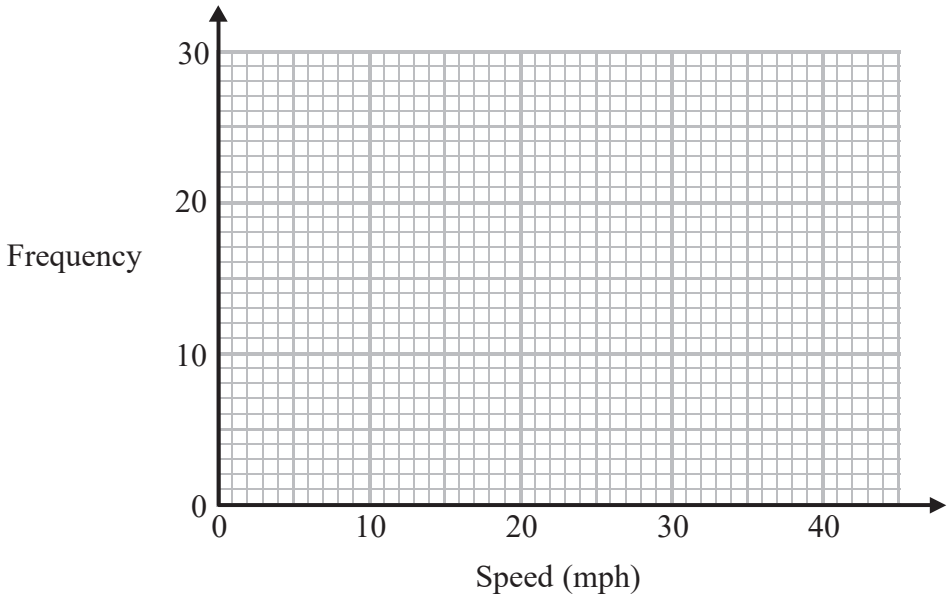
.....cm

(Total for Question 6 is 4 marks)

7 The table gives information about the speeds of 80 cars.

Speed (s mph)	**Frequency**
$0 < s \leqslant 10$	8
$10 < s \leqslant 20$	16
$20 < s \leqslant 30$	29
$30 < s \leqslant 40$	27

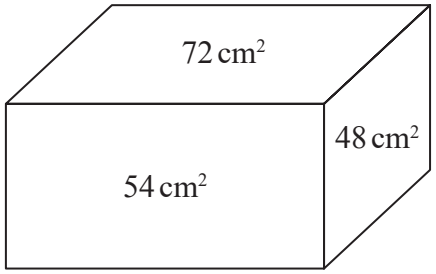
Draw a frequency polygon for this information.



(Total for Question 7 is 2 marks)

8 The diagram shows a solid metal cuboid.

The areas of three of the faces are marked on the diagram.
The lengths, in cm, of the edges of the cuboid are whole numbers.



The metal cuboid is melted and made into cubes.
Each of the cubes has sides of length 3.5 cm.

Work out the greatest number of these cubes that can be made.

.....

(Total for Question 8 is 5 marks)