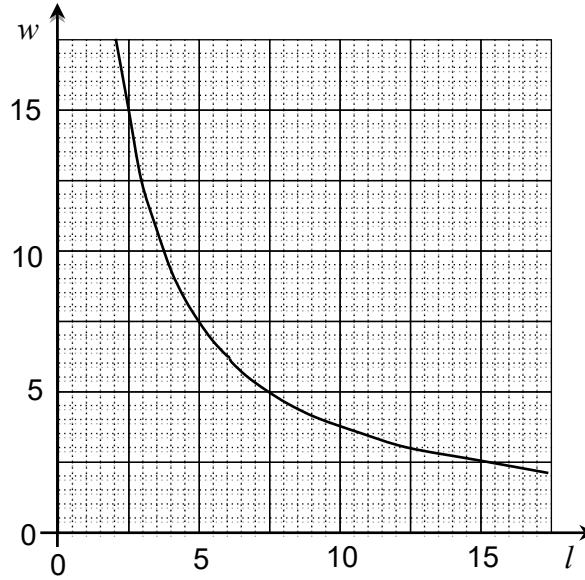


# Topic Test 1 (20 minutes)

## Real life graphs - Higher

- 1 This graph shows the relationship between the width,  $w$  cm, and the length,  $l$  cm, of a rectangle with a fixed area.



- 1 (a) Write down the width when the length is 5 cm

[1 mark]

Answer \_\_\_\_\_ cm

- 1 (b) Work out the fixed area of the rectangle.

[1 mark]

\_\_\_\_\_

Answer \_\_\_\_\_  $\text{cm}^2$

- 1 (c) When the length and width are equal, the rectangle is a square.

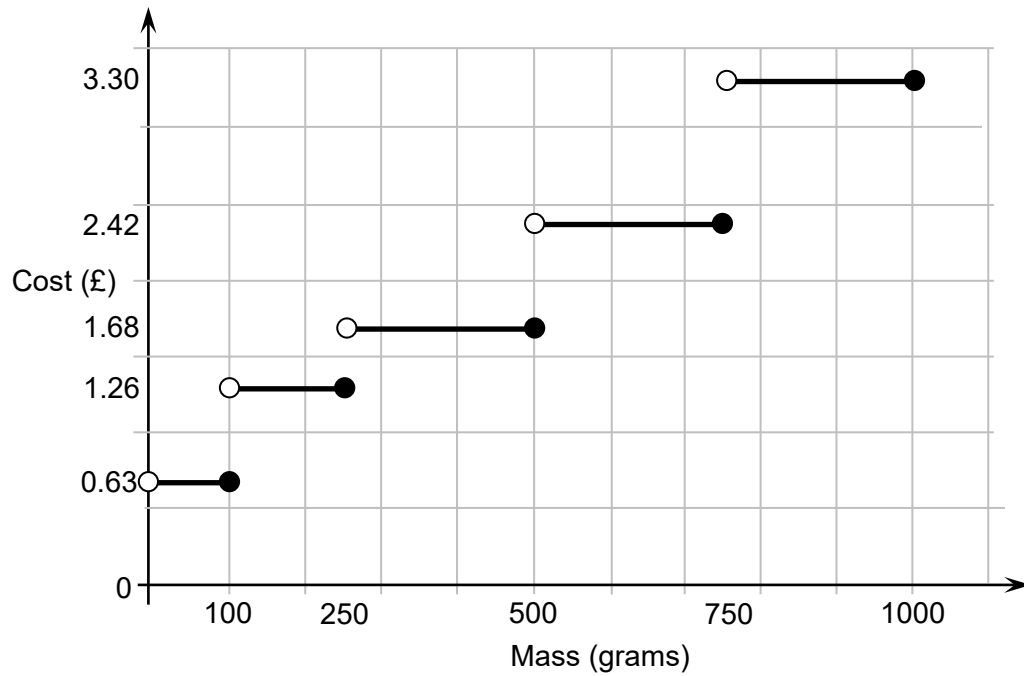
Use the graph, or otherwise, to work out the length of the side of the square.  
Show clearly how you obtained your answer.

[2 marks]

\_\_\_\_\_

Answer \_\_\_\_\_ cm

2 This graph shows first class postal rates.



2 (a) This type of graph is called a 'step-graph'.

Explain why a step-graph is used to show postal rates.

[1 mark]

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**2 (b)** Mel has 5 items to post to the same address.  
They have masses of 125g, 125g, 125g, 240g and 600g  
They can be sent separately or combined together.

Work out the cheapest way to send the items.  
You **must** show your working.

**[3 marks]**

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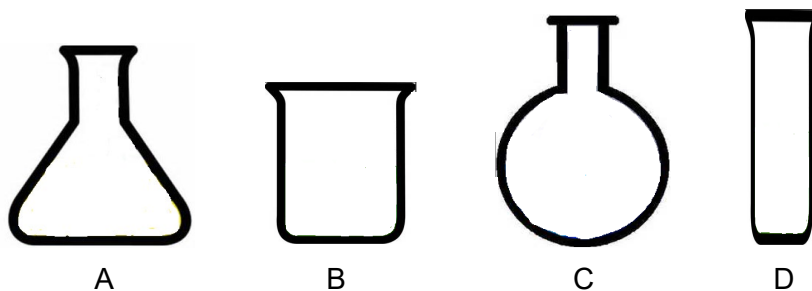
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Answer \_\_\_\_\_

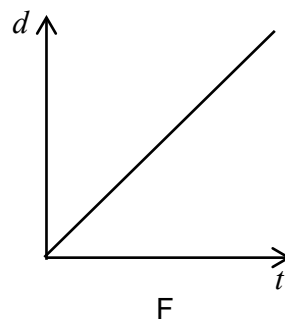
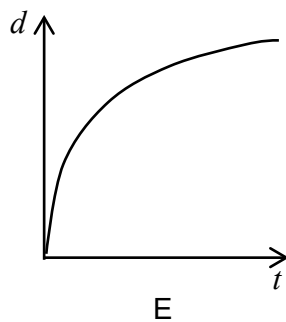
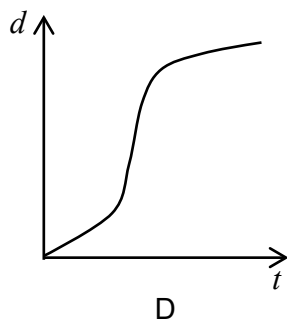
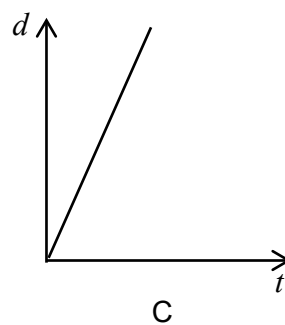
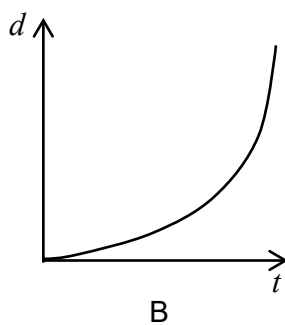
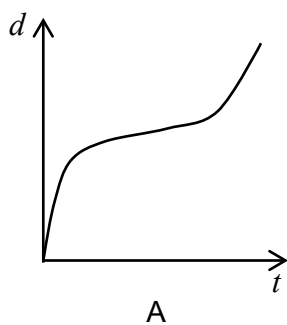
3 Here are 4 chemical flasks.



Each flask is filled with water at a constant rate.

Match the flask to the graph that shows the depth,  $d$ , of water against time,  $t$ .

[3 marks]



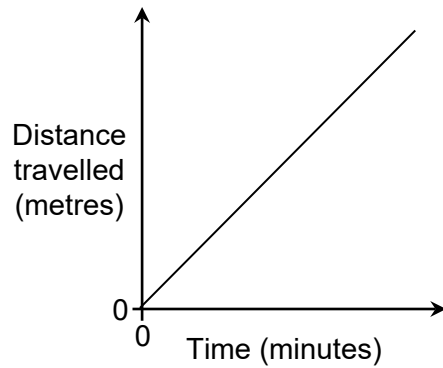
Flask A matches graph \_\_\_\_\_

Flask B matches graph \_\_\_\_\_

Flask C matches graph \_\_\_\_\_

Flask D matches graph \_\_\_\_\_

**4** Here is a graph.



**4 (a)** What is represented by the gradient of the line?

**[1 mark]**

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Answer \_\_\_\_\_

**4 (b)** Write down, in words, the units represented by the gradient of the line.

**[1 mark]**

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Answer \_\_\_\_\_

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**5** A tiler uses the graph of  $C = 0.25t + 20$  to work out the charge, £ $C$ , for a job that involves fixing  $t$  tiles.

**5 (a)** Write down the gradient of the graph.

**[1 mark]**

Answer \_\_\_\_\_

**5 (b)** What does the gradient of the line represent?

**[1 mark]**

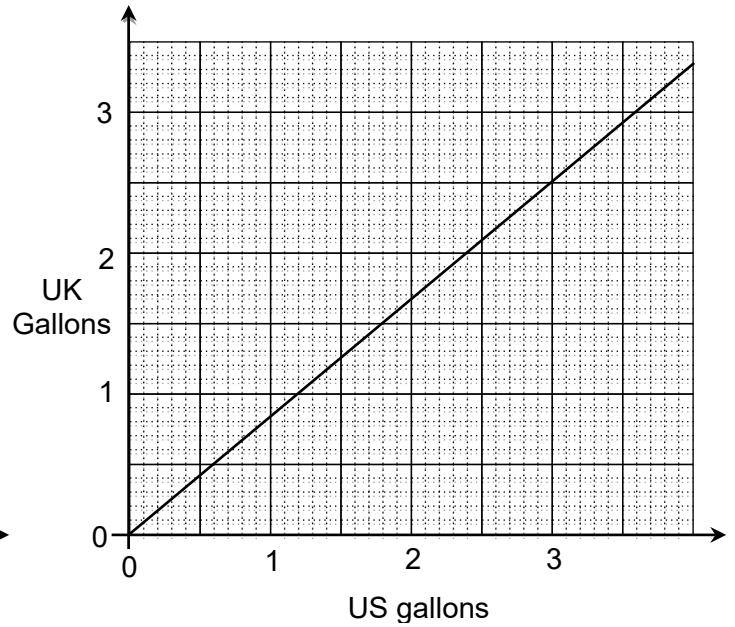
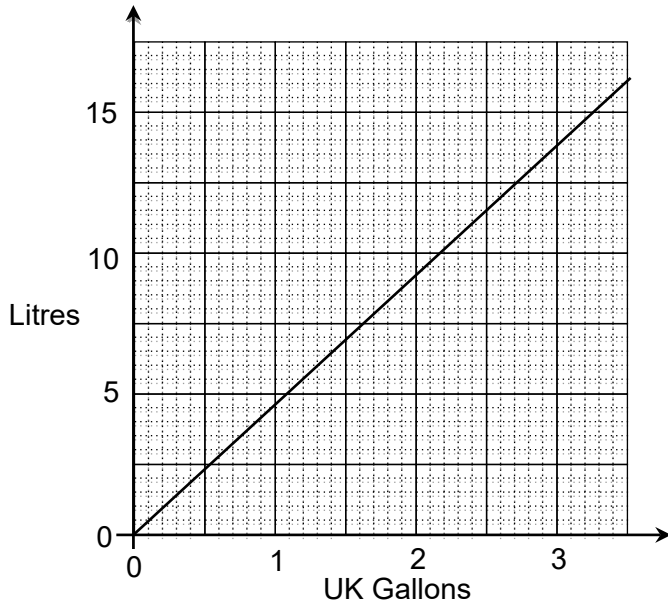
Answer \_\_\_\_\_

**5 (c)** What does the constant term represent?

**[1 mark]**

Answer \_\_\_\_\_

6 Here are two conversion graphs.



Petrol is £1.19 per litre in the UK.

Petrol is \$2.70 per US gallon in the USA.

£1 = \$1.56

George buys 3 US gallons of petrol.

How many times more would the equivalent amount of petrol cost in the UK?

**[4 marks]**

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Answer \_\_\_\_\_