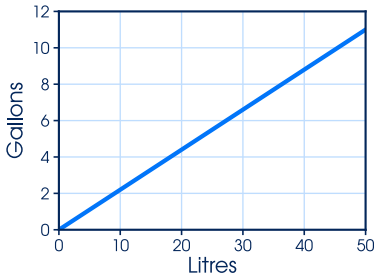
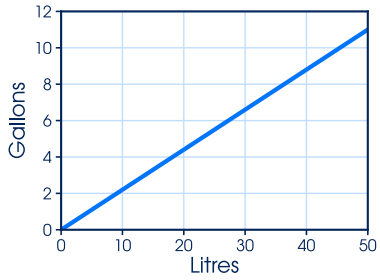
GCSE HIGHER · REVISION MAT 3

Real-life graphs

1 Use the graph to convert 30 litres to gallons.



2 Use the graph to convert 10 gallons to litres.

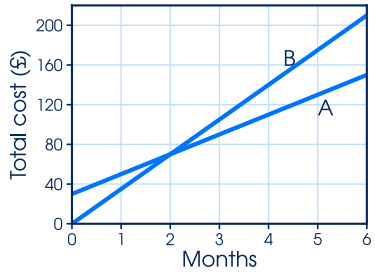


3 Apples cost 40p each.

Explain why the graph of cost against number of apples passes through (0, 0).

4 Gym A: £30 to join plus £20 a month.

Gym B: £35 a month.



After how many months is gym A cheaper?

5 A cylinder is filled with water at a constant rate.

Explain why the graph of depth against time is a straight line.

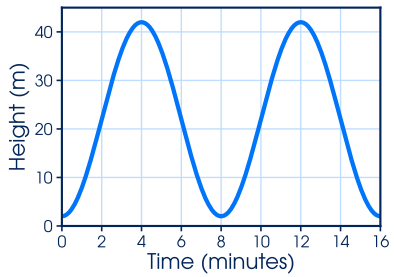
6 Ana changes £400 to dollars at £1 = $1.25.

She spends $320.

She changes the rest back at £1 = $1.30.

How many pounds does she get?

7 The graph shows the height of a seat on a big wheel.



Explain why the graph repeats.

How long is one turn?

8 A big wheel has diameter 40 m and its lowest point is 2 m above the ground.

It turns once every 8 minutes.

For how long is a seat more than 32 m high in each turn?

Mr&Mrs MATHS

ANSWERS · REVISION MAT 3

Real-life graphs

1 About 6.6 gallons

2 About 45 litres

3 0 apples cost 0p: cost is directly proportional to number.

4 $30 + 20m < 35m$

$m > 2$

From 3 months

5 The cross-section is the same all the way up, so the depth rises by the same amount each second.

6 ~~£~~400 = $500

$500 – $320 = $180

180 ÷ 1.30 = £138.46

7 The wheel goes round and round.

One turn takes 8 minutes.

8 $h = 22 – 20\cos(45t)$

$h > 32 \Rightarrow \cos(45t) < –0.5$

$120 < 45t < 240$

2 minutes 40 seconds

Mr&Mrs MATHS