



Real-life graphs

Distance-time graphs

A DISTANCE-TIME graph shows how distance changes with time. This graph shows Jodi's run. The shape of the graph gives you information about the journey.

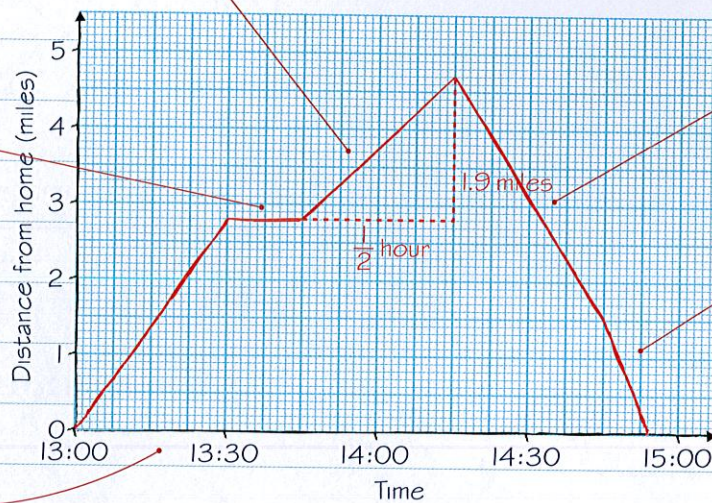
The gradient of the graph gives Jodi's speed.

$$\text{Gradient} = \frac{\text{distance up}}{\text{distance across}} = 1.9 \div \frac{1}{2} = 3.8$$

Jodi was travelling at 3.8 mph on this section of the run.

A horizontal line means no movement. Jodi rested here for 15 minutes.

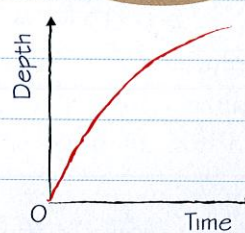
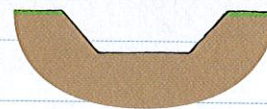
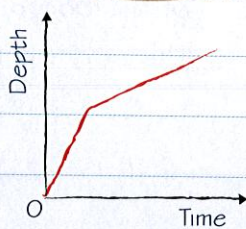
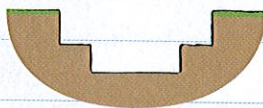
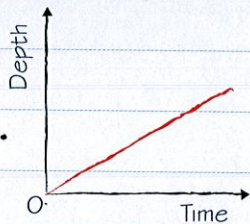
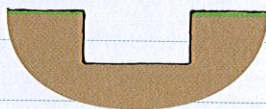
The horizontal scale might be marked in minutes or hours. Remember that there are 60 minutes in 1 hour.



Straight lines mean a constant speed.

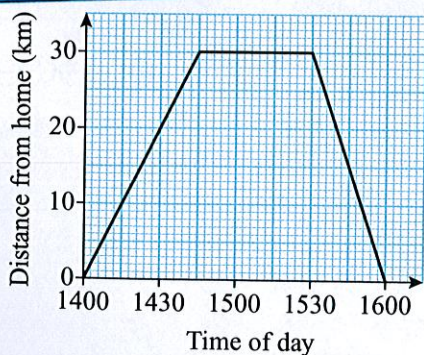
Jodi sped up when she was nearly home. The graph is steeper here.

Graphs can be used to convert units or currencies, or to show how other quantities change with time. These garden ponds are filled with water at a constant rate. The graphs below show how the depth of water in each pond changes with time.



The narrower the section of pond, the faster the water depth will increase.

Now try this



This distance-time graph shows Judy's journey to the airport and back.

- What is the distance from Judy's home to the airport? **(1 mark)**
- For how many minutes did Judy wait at the airport? **(1 mark)**
- Work out Judy's average speed on her journey home from the airport. Give your answer in kilometres per hour. **(2 marks)**

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