

Graphs of real-life situations

- Interpreting the information shown by a graph

Keywords

You should know

explanation 1

1 This graph shows oven temperatures between 130°C and 240°C on the horizontal axis. The corresponding temperatures in $^{\circ}\text{F}$ are shown on the vertical axis.

a Use the graph to convert these temperatures to Fahrenheit.

i 135°C

ii 180°C

iii 210°C

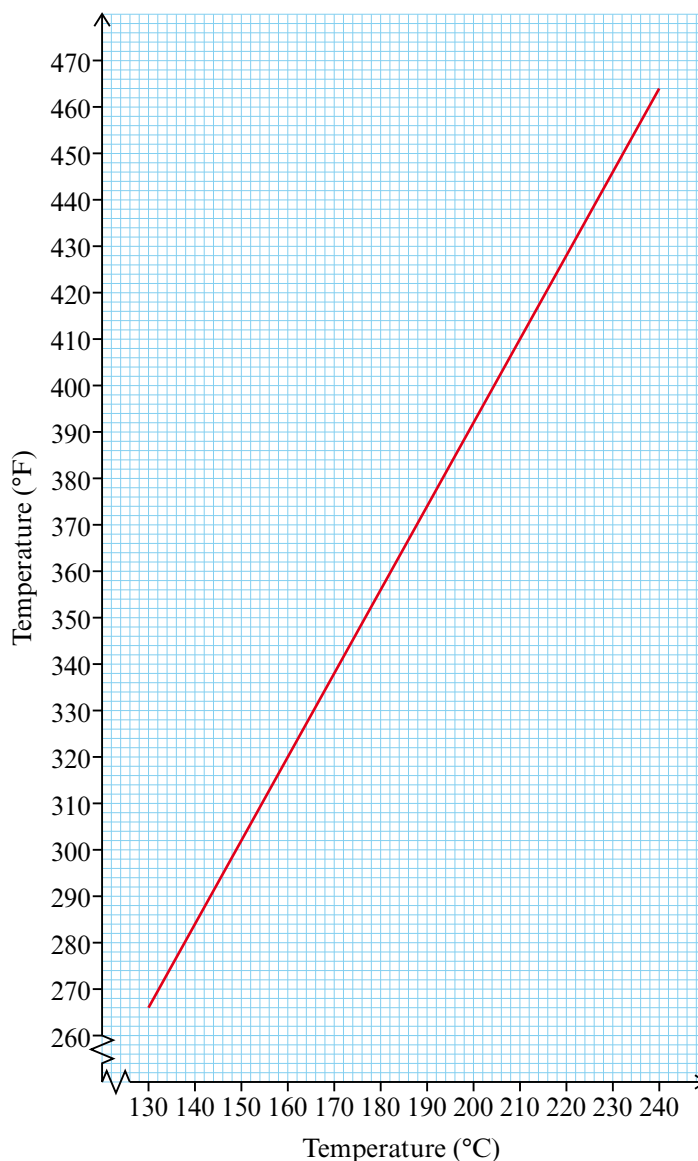
b Use the graph to convert these temperatures to Celsius.

i 320°F

ii 392°F

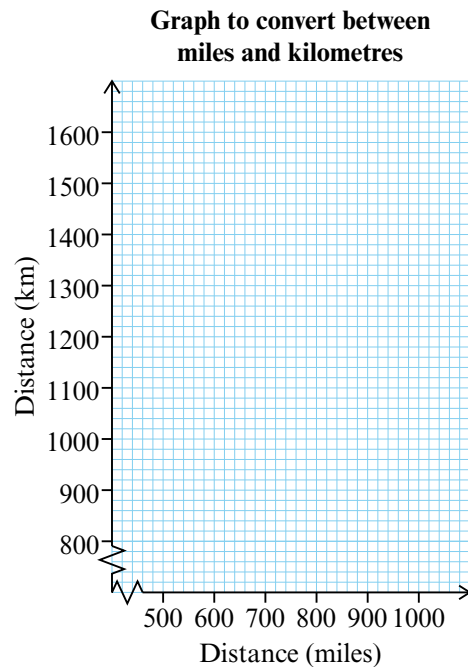
iii 437°F

Graph to convert between Celsius and Fahrenheit



2 1000 miles is the same as 1600 kilometres.

- a**
- i** How many kilometres are there in 100 miles?
 - ii** How many kilometres are there in 500 miles?
 - iii** How many kilometres are there in 800 miles?
- b** Copy this diagram onto graph paper.
- i** Plot a point on the diagram to show that 1000 miles is the same as 1600 km.
 - ii** Use your answers to parts **a ii** and **a iii** to plot two more points on your diagram.
 - iii** Draw a straight line through the three points.



- c** Use your graph to convert these distances to kilometres.
- i** 550 miles **ii** 720 miles **iii** 960 miles
- d** Use your graph to convert these distances to miles.
- i** 960 km **ii** 1040 km **iii** 1360 km

3 a Draw and label a pair of axes and plot points to show the information in the table.

Inches	24	36	60
Millimetres	600	900	1500

- b** Draw a straight line graph through your plotted points.
- c** Use your graph to convert these distances to millimetres.
- i** 32 inches **ii** 41 inches **iii** 53 inches
- d** Use your graph to convert these distances to inches.
- i** 925 millimetres **ii** 1100 millimetres **iii** 1225 millimetres

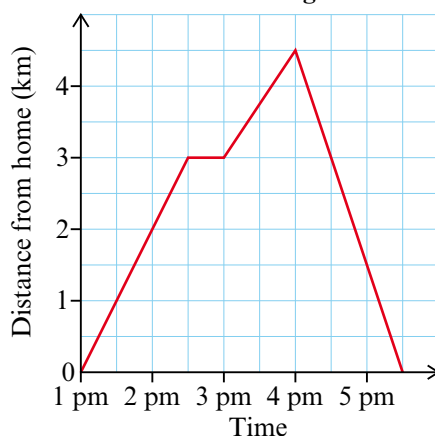
explanation 2

- 4** Mira set off from home to take a walk.

This graph shows her progress.

- a** Mira stopped for a rest.
What time did she stop?
- b** How long did she rest for?
- c** How far did she walk altogether?
- d** How long did her return journey take?
- e** What time did she get home?
- f** How much time did she spend walking?

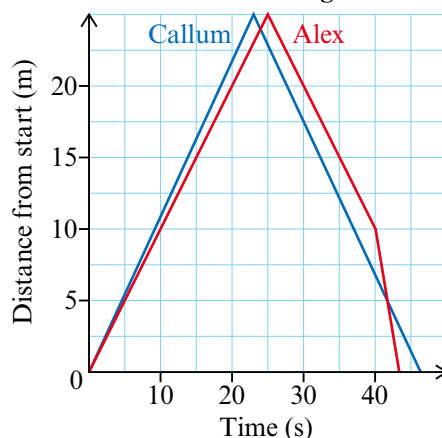
Graph showing distance from home during a walk



- 5** Callum and Alex raced each other over two lengths of a swimming pool. This graph shows what happened.

- a** Who turned first?
- b** How long was the pool?
- c** What distance was left to go when they were level with each other?
- d** Who won the race?
- e** What did Alex do that was different to Callum?

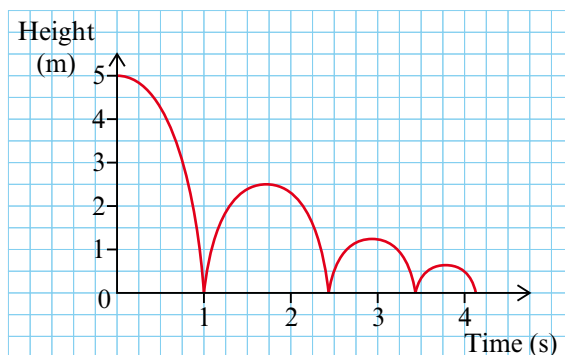
Graph showing distance from start during race



- 6** A ball is dropped onto a hard surface. This graph shows how its height changes with time up to the fourth bounce.

- a** From what height was the ball dropped?
- b** How long did it take to reach the ground?
- c** How high did the ball reach on its first bounce?
- d** On which bounce did the ball reach less than 1 m for the first time?

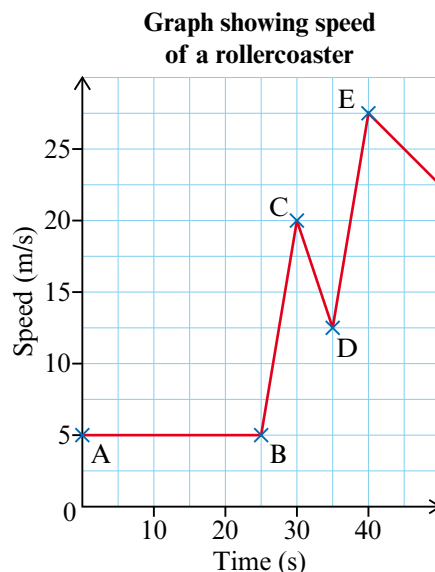
Graph showing height of bounce



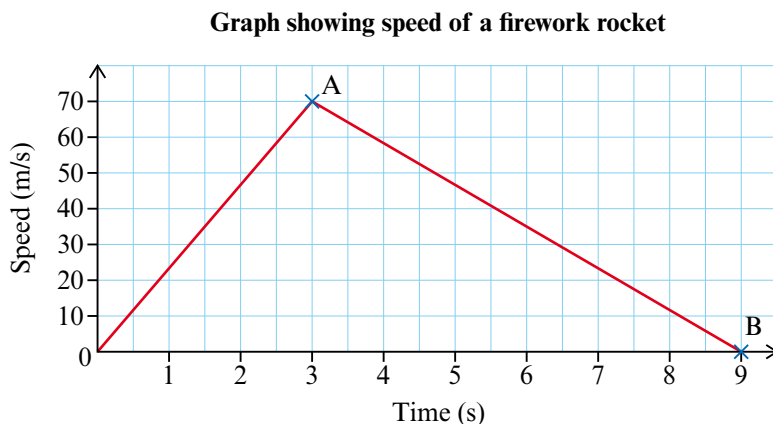
explanation 3

- 7** This graph shows the speed of a rollercoaster during the first 50 seconds of a ride.

- What can you say about the speed corresponding to the first section AB of the graph?
- Which point on the rollercoaster do you think B corresponds to?
- Describe what section BC shows.
- Describe what section CD shows.
- What is the greatest speed shown on the graph?



- 8** A firework rocket is pointed vertically upwards. This graph shows how the speed of the rocket changes with time.



- Describe what is happening to the rocket during the first 3 seconds of its flight.
- What is the greatest speed of the rocket?
- Describe what the section AB of the graph represents.
- Which of the labelled points corresponds to the greatest height reached?
Explain your answer.