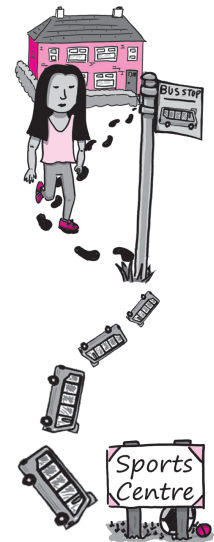
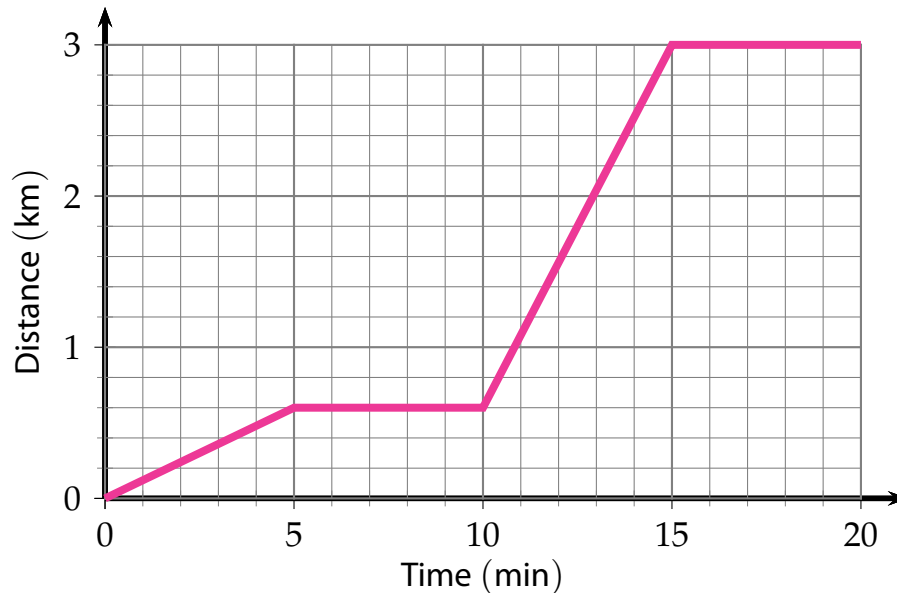


Distance-Time Graphs

In a **distance-time** graph the total **distance** travelled so far is plotted against the **time** since the journey **started**.

Here is a distance-time graph. It shows a teenager's journey from home to a sports centre. They **walk** to a bus stop, **wait** for the bus, and then ride the bus to the sports centre.



- 1 This question is about the teenager's journey to the sports centre shown on the graph. Label these moments in the journey with the letters indicated:
A The teenager leaves home
B They get to the bus stop.
C The teenager boards the bus
D They arrive at the sports centre.
- 2 This question is also about the teenager's journey to the sports centre.
 - (a) How much time did it take to walk to the bus stop?
 - (b) How far is the bus stop from the teenager's home?
 - (c) How much time did the teenager have to wait for the bus?
 - (d) How far did the teenager ride the bus?
 - (e) How far did the teenager travel in total?
- 3 How can you tell **from the graph** that the bus travelled faster than the teenager walked?

- 4 The teenager in Q2 always walks at the same speed. How far would they walk in
(a) one hour, (b) one second?

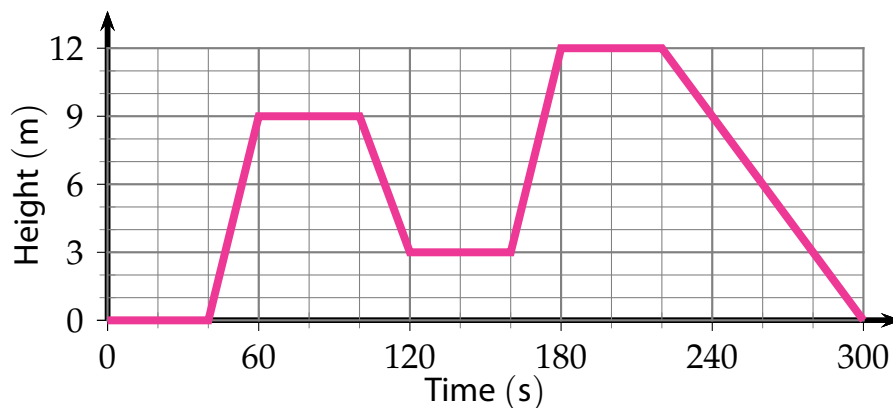
-
- 5 What is the teenager's walking speed
(a) in km/h, (b) in m/s?

-
- 6 What is the speed of the bus in the graph? Give your answer in
(a) km/h, (b) m/s.

-
- 7 How much time would it take for the teenager in Q2 to walk from home to the sports centre? Assume that they have to use the same road as the bus.

-
- 8 If the teenager in Q2 were able to catch the bus directly outside their home, how much time would it take them to get to the sports centre?

This graph shows the height of the lift (elevator) in a building during a five minute period of time. The height is an example of a **displacement**. Displacement measures the location of something in a particular direction (here upwards from the ground).



- 9 Use the graph of the lift's height to answer these questions.
- (a) Label the graph with an **A** when the lift is not moving.
- (b) How can you tell **from the graph** if the lift is moving up or down?
- (c) When is the lift moving at its slowest speed (but not stationary)?
- (d) How far does the lift move in total during the five minutes?