

**Physics speed/distance practice questions**

$speed = \frac{distance}{time}$

$distance = speed \times time$

1- A girl cycles for 3hrs at a speed of 40 km/h. What distance did she travel?

$d = 40 \times 3 = 120 \text{ km}$

2- A train travels at a speed of 30mph and travel a distance of 240 miles. How long did it take the train to complete it's journey?

3- A car travels a distance of 540km in 6 hours. What speed did it travel at in m/s?

Step 1 - Convert 540 km  $\rightarrow$  m = 540000  
 convert 6 hrs  $\rightarrow$  s =  $6 \times 60 \times 60 = 21600$   
 $speed = \frac{540000}{21600} = 25 \text{ m/s}$

4- Bob is a runner. He runs the 100m sprint in 10.6s. What speed did he travel at? (in m/s)

$speed = \frac{100}{10.6} = 9.43 \text{ m/s}$

5- A cyclist travels 20km in 4hrs. What speed did the cyclist cycle at?

$speed = \frac{20}{4} = 5 \text{ km/h}$

6- The distance between two cities is 144km, it takes me 3hours to travel between these cities. What speed did I travel at?

$speed = \frac{144}{3} = 48 \text{ km/h}$

7- A mouse runs a distance of 2metres in 15 seconds. What is it's speed in cm/s?

Step 1 - Convert 2m  $\rightarrow$  cm = 200  
 $speed = \frac{200}{15} = 13.3 \text{ cm/s}$

8- Jim travelled at a speed of 18km/h for 2 hours. What was the distance covered?

$distance = 18 \times 2 = 36 \text{ km/h}$

9- A beetle travels at a speed of 9cm/s, it travels a distance of 108cm before it is caught in a jar. How long did the beetle run for in m/s?

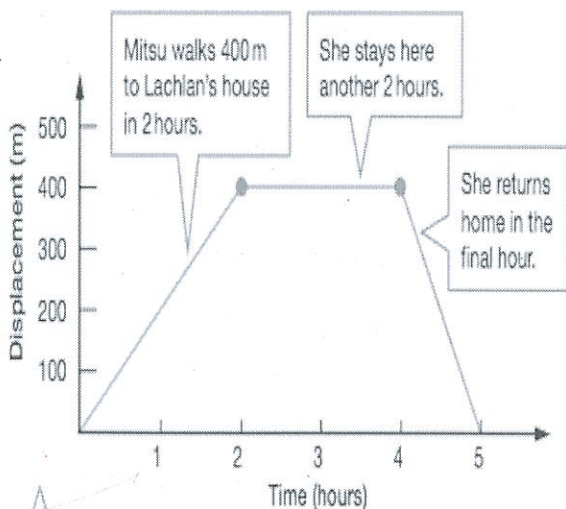


Figure 8.1.11 This graph indicates that Mitsu has travelled out and then returned to her starting point.

9 Look at the displacement-time graph of Mitsu walking from home to Lachlan's house, as shown in Figure 8.1.11 on page 255.

- a Calculate Mitsu's average speed (in km/h):
  - i travelling to Lachlan's house over the first 2 hours (Hint: Convert metres to kilometres.)
  - ii while returning from Lachlan's house over the last hour.
- b Explain why Mitsu's displacement does not change from 2-4 hours of the journey.
- c Explain how you know Mitsu has reached home at the end of the journey.

PTO for Answers