7) $d = 200\ km$

$v = 10.\ m/s$

$t = ?$

$10\ m/s \times \frac{3.6\ km/h}{1\ m/s} = 36\ km/h$

$t = \frac{d}{v}$

$t = \frac{200.\ km}{36\ km/h}$

$t = 5.6\ h$

8) Car

$v = \frac{d}{t}$

$v = \frac{240\ km}{2.0\ h}$

$v = 120\ km/h$

Sprinter

$v = \frac{d}{t}$

$v = \frac{100\ m}{9.5\ s}$

$v = 10.5\ m/s$

$10.5\ m/s \times \frac{3.6\ km/h}{1\ m/s}$

$= 37.8\ km/h$

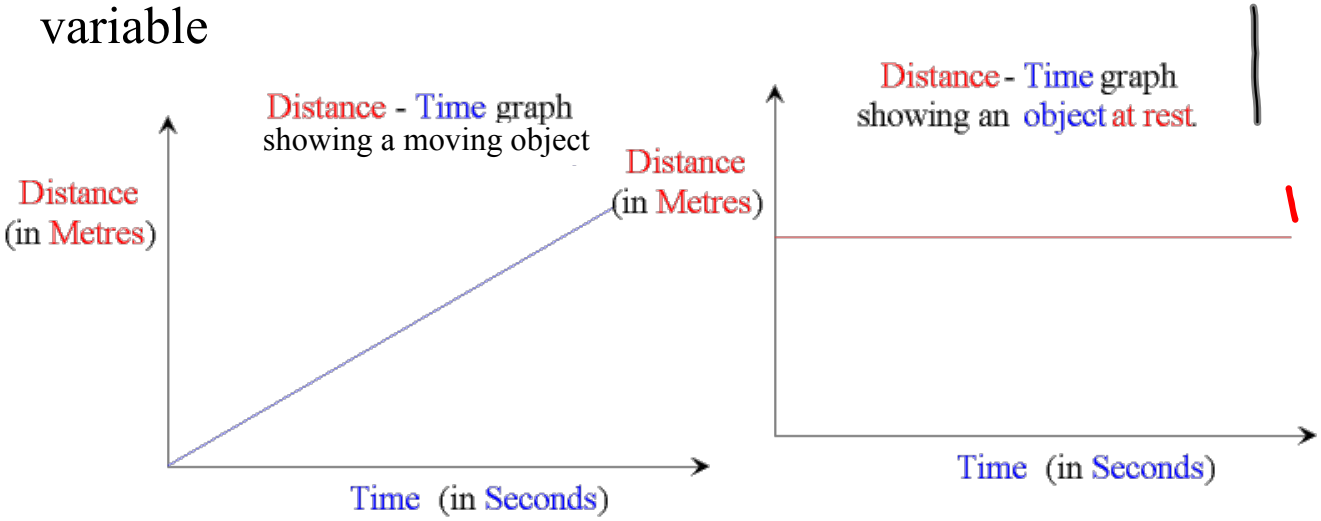
$120\ km/h - 37.8\ km/h = 82.2\ km/h$

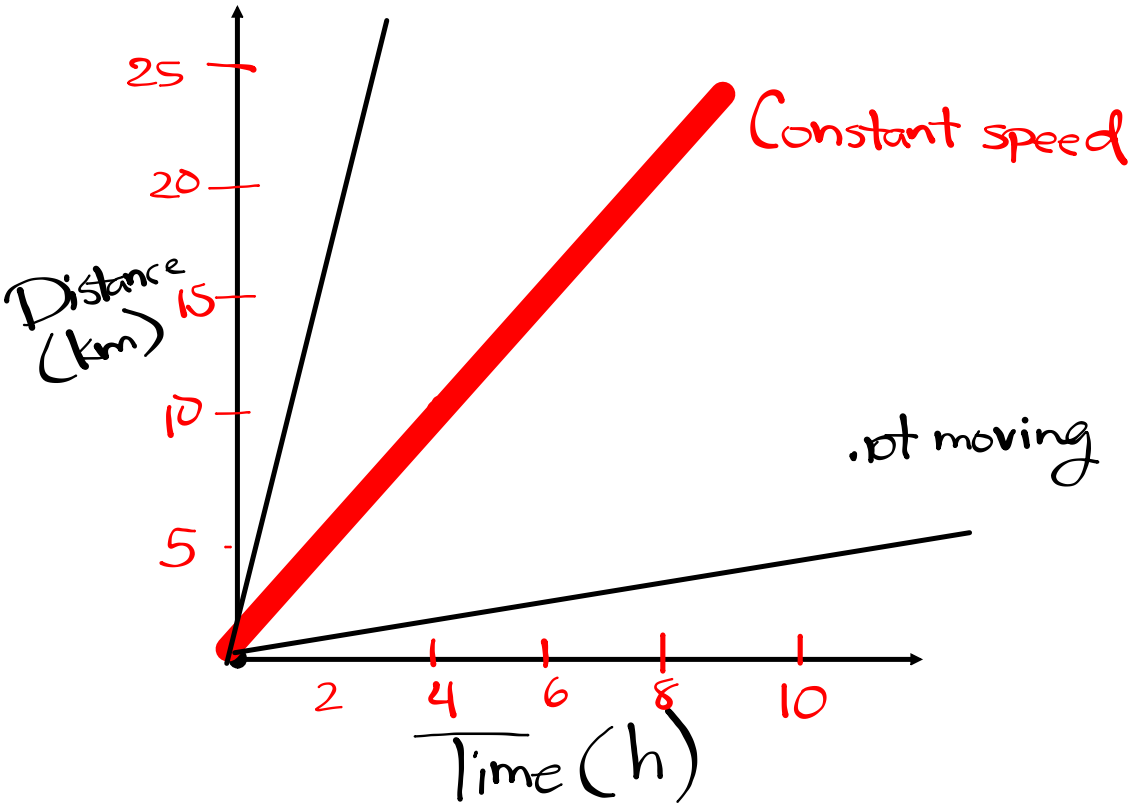
Distance- Time Graphs

Shows the relationship between distance and time.

Distance is plotted on the y-axis and is the dependent variable

Time is plotted on the x-axis and is the independent variable

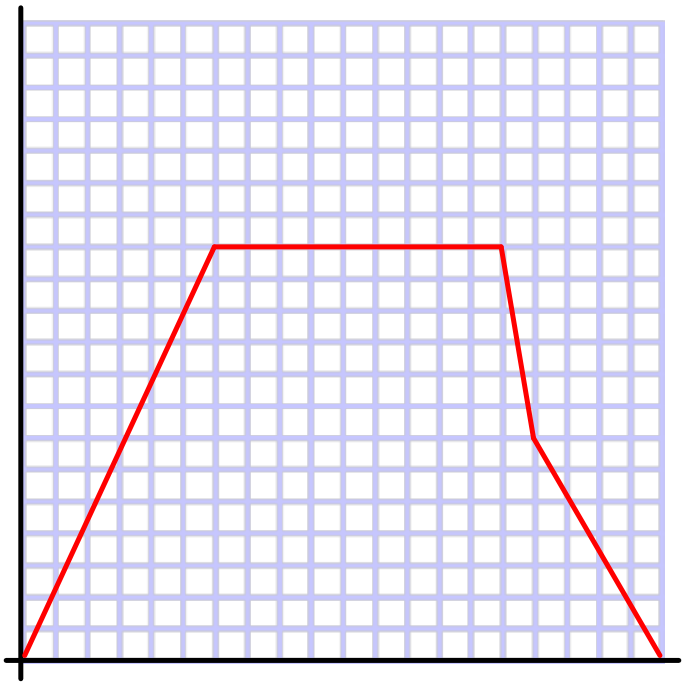



25
20
15
10
5
Distance (km)
Constant speed
not moving
2
4
6
8
10
Time (h)

Distance-time graphs

Label the graph.

Click here for the answer



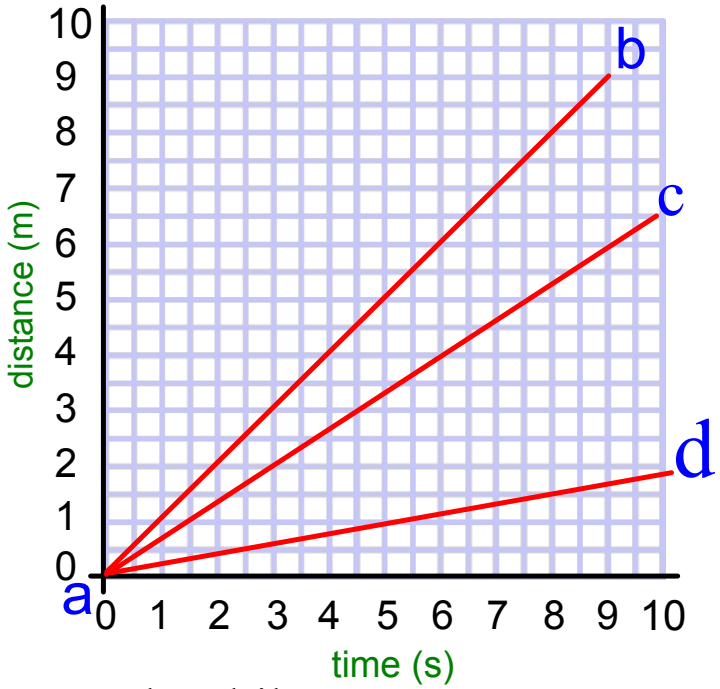
distance

time

moving

stationary

Constant Speed



If an object has a constant speed, it shows as a straight line on a distance-time graph.

The slope of a line on a distance time graph represents the speed.

If you increase the speed the slope will become steaper.

a-b = bike
a-c = run
a-d = walk

Based on the following graph which is the fastes way to travel?

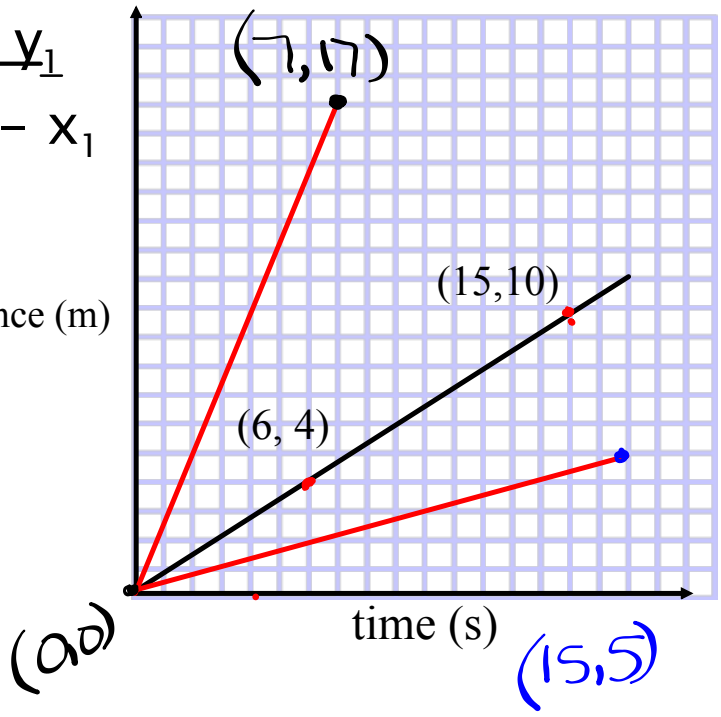
Calculating Speed

To calculate the actual speed on a distance time graph you calculate the slope using two points on the graph and the following formula:

$$v = \frac{\Delta d}{\Delta t} = \frac{y_2 - y_1}{x_2 - x_1}$$

(6, 4) ; (15, 10)

x_1 y_1 x_2 y_2

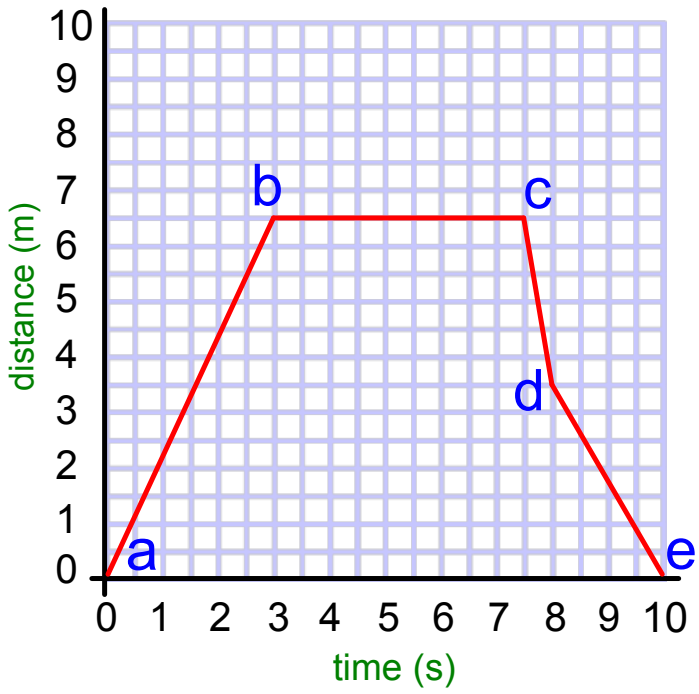


$$v = \frac{10m - 4m}{15s - 6s}$$

$$v = \frac{6m}{9s}$$

$$v = 0.67 m/s$$

Answer the questions in your exercise books.



1. What is the average speed between a and b?
2. Which line shows the vehicle is stationary?
3. Which line shows the greatest speed?

Click here for the answer

Calculating Speed

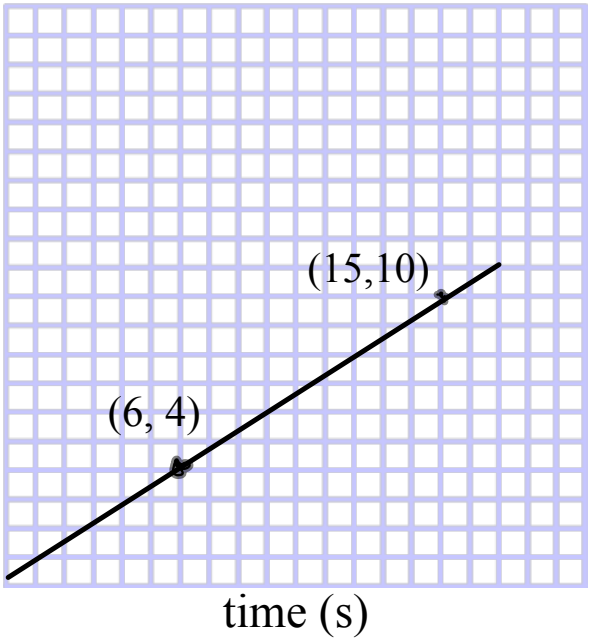
To calculate the actual speed on a distance time graph you calculate the slope using two points on the graph and the following formula:

$$v = \frac{\Delta d}{\Delta t} = \frac{y_2 - y_1}{x_2 - x_1}$$

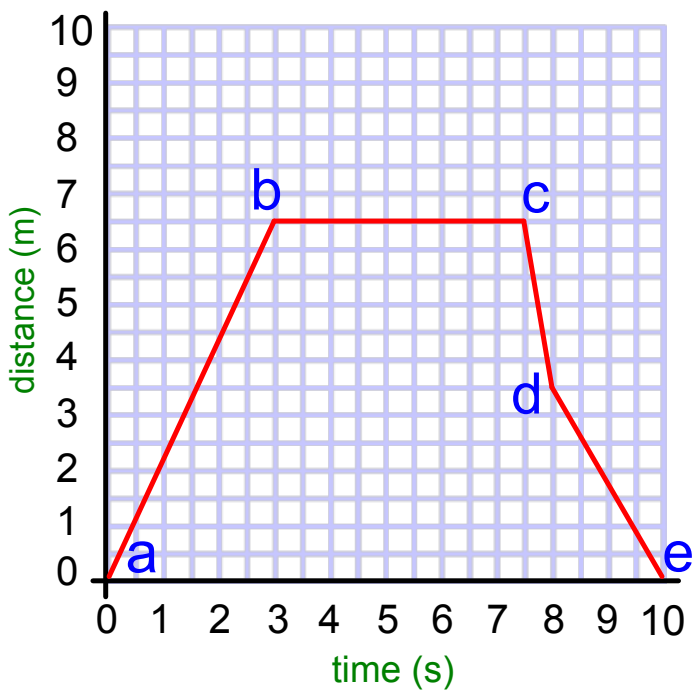
i.e. $v = \frac{10m - 4m}{15s - 6s}$

$v = \frac{6m}{9s}$

$v = 0.6m/s$



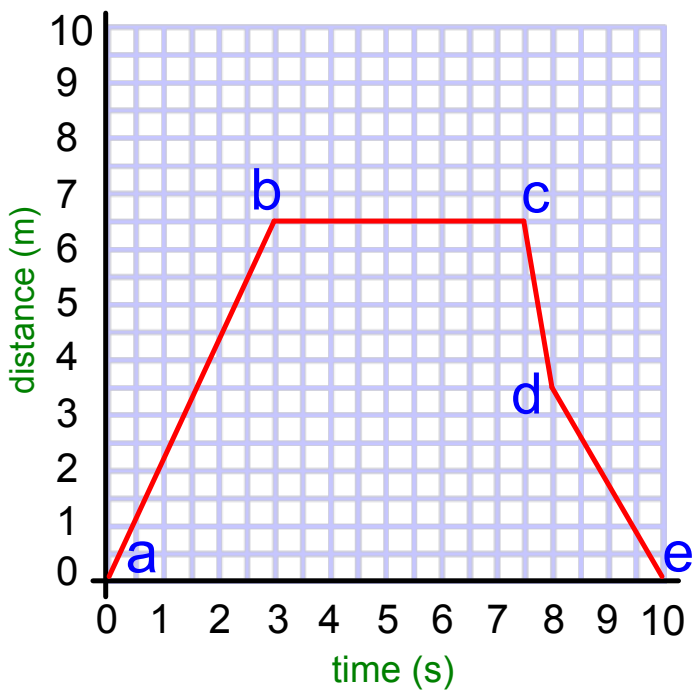
Answer the questions in your exercise books.



1. What is the average speed between a and b? 2.1m/s
2. Which line shows the vehicle is stationary? bc
3. Which line shows the greatest speed? cd

Click here to go back

Answer the questions in your exercise books.



1. What is the average speed between a and b? 2.1m/s
2. Which line shows the vehicle is stationary? bc
3. Which line shows the greatest speed? cd

Click here to go back

Attachments

average speed ex 2 answers.notebook

average speed ex 1.notebook