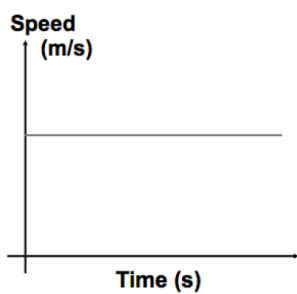
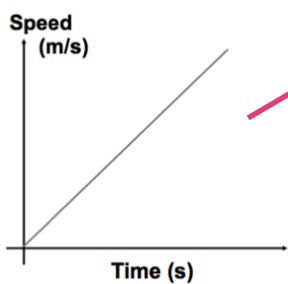
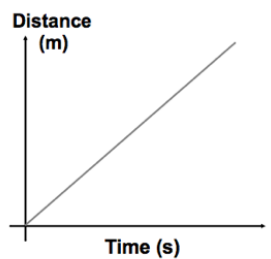


1. The graphs show how the motion of four objects change with time. The statements describe different motions.

Draw a line or lines from each graph to the description of the motion represented by that graph. (4 marks)

Motion graphs

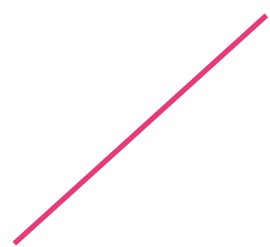
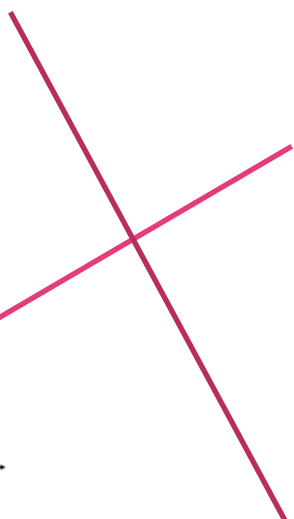
Descriptions of motion



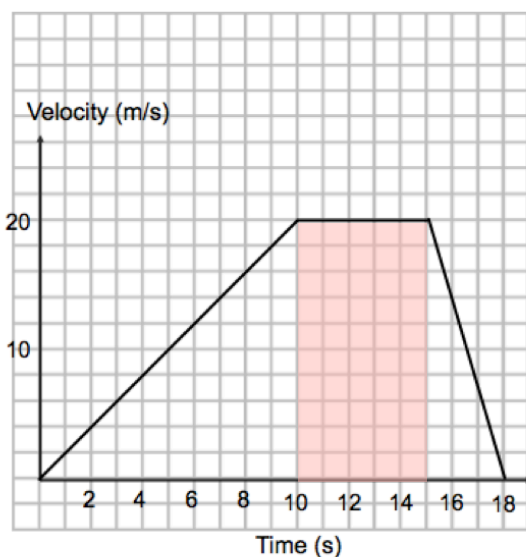
No movement

Accelerating

Steady Speed



2. A cyclist waits at a set of traffic lights. The graph shows how her velocity changes after the lights turn green, over a period of time.



- 2 (a) Calculate the acceleration during the first part of the journey from 0 to 10 seconds. *Clearly show your working*

$20 \div 10$ or $(20 - 0) \div 10$ or $(20 - 10) \div (10 - 0)$ [1 mark]

Acceleration =2m/s/s [1 mark]

(2 marks)

- 2 (b) Calculate the distance travelled for the part of the journey labelled B. Ensure you **write the correct units**. *Clearly show your working*

Area of shaded region = 5×20 [1 mark]

Answer = 100 [1 mark]

units = m or metres [1 mark]

Distance travelled =100 m.....

(3 marks)

- 2 (c) Compare the motion of the cyclist for part C of the journey with part A.

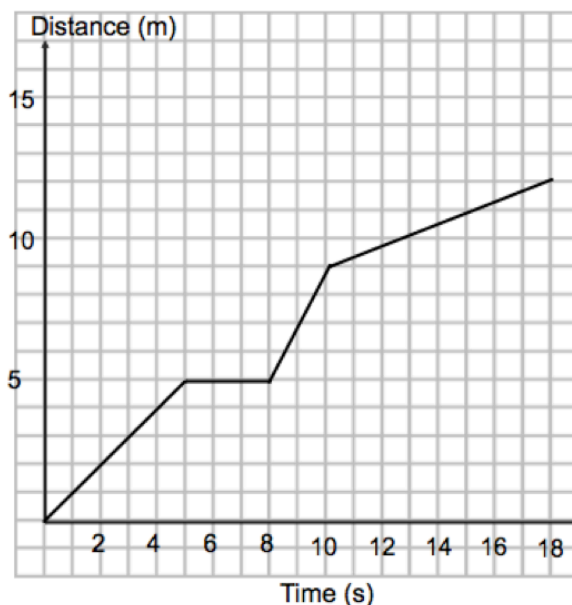
cyclist is slowing down/decelerating/getting slower [1 mark]

at a faster rate/slowing down faster/more quickly [1 mark]

'slowing down faster/more quickly' gets 2 marks

(2 marks)

3. A toy car makes a short journey. The graph shows how the distance travelled changes with time.



(3) (a) At which point on the graph was the car moving at the fastest speed?

8 to 10 seconds [1 mark]

give mark if labelled correctly on the graph

(1 mark)

(3) (b) How long did the car stop for?

3 seconds

(1 mark)

(3) (c) Calculate the speed of the car for the part of the journey from 8 to 10 seconds.

$4 \div 2$ or $(9 - 5) \div (10 - 8)$ [1 mark]

2 [2 marks]

Speed = m/s

(2 marks)

(Total 15 marks)