Corbettmaths

Velocity-Time Graphs

Mechanics

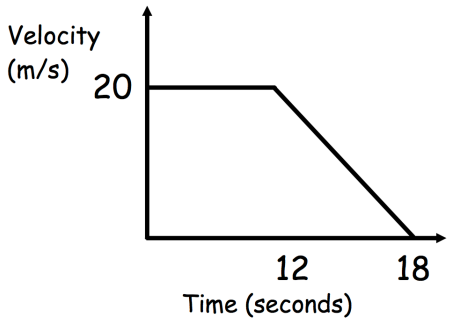
Video Tutorial

A horizontal line means the object is moving with a constant velocity (or at rest if v = 0)

The gradient of the line is the acceleration.

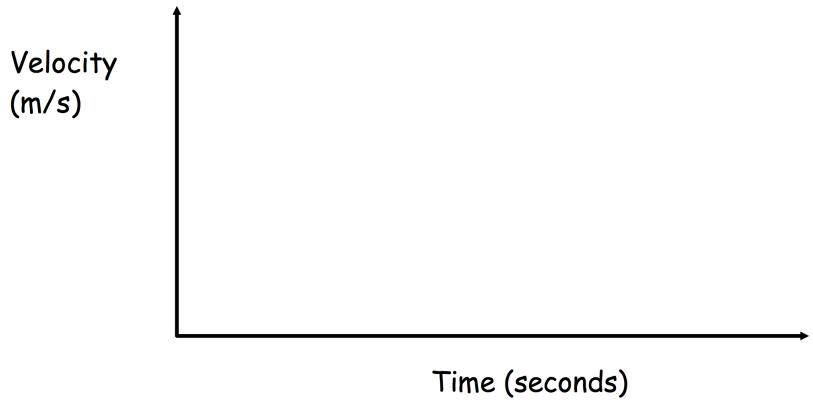
The area under a velocity-time graph is the displacement.

Find the distance travelled.



A car travels down a straight road for one minute.
The car starts from rest and accelerates to a velocity of 25m/s over 10 seconds.
It then keeps travelling at the same velocity for next 50 seconds.

(a) Draw a displacement-time graph for this information.



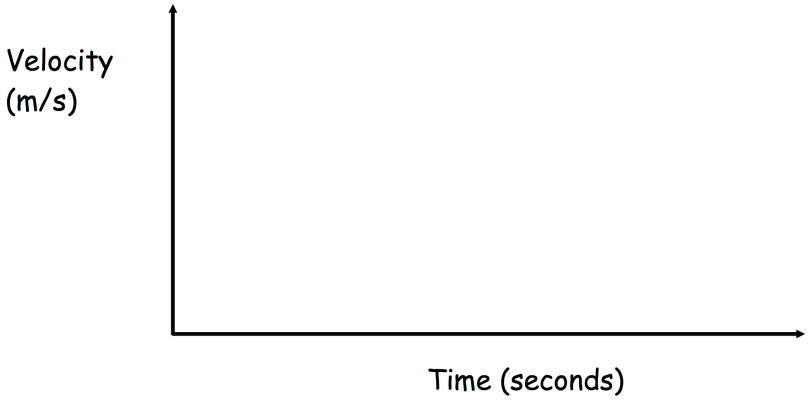
(b) Calculate the rate at which the car accelerated over the first 10 seconds.

(c) Calculate the distance travelled by the car.

A car drives down a straight road for 30 seconds.

For the first 20 seconds, the car travels at a velocity of 24m/s.
The car then decelerates to rest at a constant rate over the next 10 seconds.

(a) Draw a velocity-time graph for this information.



(b) Calculate the rate of deceleration over the last 10 seconds.

(c) Find the distance travelled by the car.