

Speed vs. Velocity

Speed is how fast or slow an object is moving.

- Speed requires a distance and a time.
- To calculate speed

$$\text{Speed} = \frac{\text{distance}}{\text{time}}$$

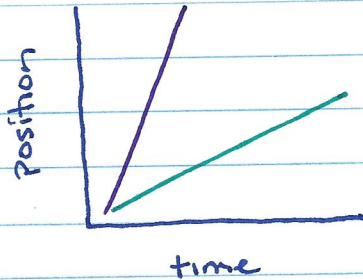
Velocity is how fast or slow an object is moving in a specific direction.

- If the direction changes, the velocity changes even if the speed stays the same.
- Velocity requires a distance, a time, AND a direction.
- To calculate velocity

$$\text{Velocity} = \frac{\text{distance}}{\text{time}}, \boxed{\text{direction}}$$

Velocity can be graphed on a position vs time graph.

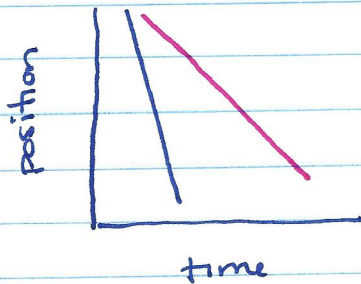
position vs time



Object is moving fast away from starting point (home).

Object is moving slow away from starting point (home).

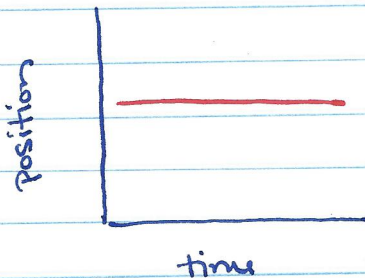
Position vs. time



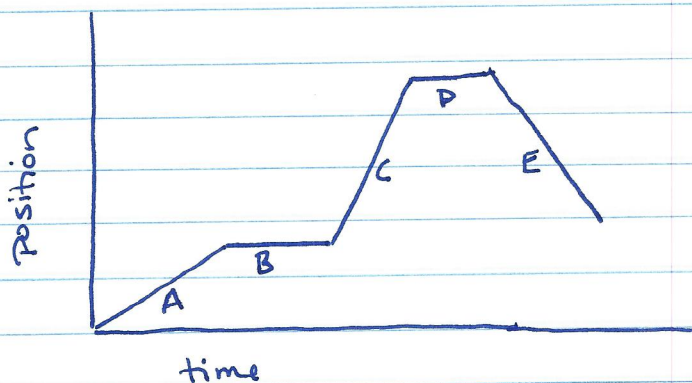
Object is moving fast towards starting point (home).

Object is moving slow towards starting point (home).

position vs. time



Object is stopped



A slow away from home

B stopped

C fast away from home

D stopped

E fast towards home