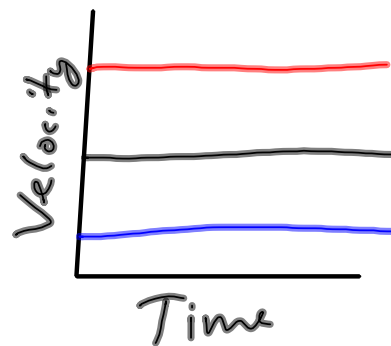
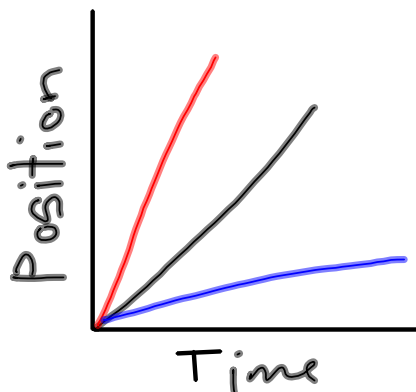


Draw Position (y) vs. time (x) graphs for the following scenarios (no numbers, just shapes)

- A A car starts at position zero and drives at a constant 3 m/s.
- B A car starts at position zero, drives at a constant speed, and then stops for a while
- C A car drives from a stop, speeding up.
- D A car is driving and then slows down
- F A car drives backwards speeding up

Draw velocity vs time graphs for each of the above

Constant velocity graphs



The slope of the distance vs time graph = The Velocity

At rest = stopped
Velocity = 0

Speed vs Velocity

Speed: how fast something goes
Scalar: Just a quantity

Velocity: Speed + direction
Vector: can be drawn with an arrow
both magnitude + direction

Position vs Displacement vs. Distance

Position: Location of an object with respect to the origin

Displacement: Change in position between 2 points

$\Delta X = X_f - X_i$

change in

$\Delta x = 8m - (-2m) = 10m$

Distance: Total amount of ground covered (always positive)

Kinematic Equations
Motion Equations

$$\Delta x = v \cdot \Delta t$$

Only for Constant Velocity

Kinematics Lab

Question(s): What is the relationship between the time an object experiences a constant acceleration and:

1. its displacement.
2. its final velocity.