

(2.04) - Accelerated Motion V-T, A-T Worksheet

1. Use the written statements below to determine if acceleration is POSITIVE or NEGATIVE
  - a. An object moves in the negative direction while speeding up.
  - b. An object changes its velocity from +10 m/s to -10 m/s.
  - c. An object moves in the positive direction while slowing down.
  - d. An object changes its velocity from -4 m/s to -2 m/s.
  
2. A driver sits in a car that rests at a stop light. When the light turns green, the driver steps on the gas and accelerates forward. Before reaching a steady rate of speed, the driver reaches another stop light, and applies the brakes to bring the car back to rest. Create a qualitative (no numbers) Velocity vs. Time graph for the motion of the car.
  
3. A car drives in the negative direction with constant velocity. After a short time, the car speeds up without changing direction. Create a qualitative (no numbers) Velocity vs. Time graph for the motion of the car.
  
4. A car speeds up from rest to a velocity of 10 m/s over a time interval of 2 seconds.
  - a. Create a quantitative (with numbers) Velocity vs. Time graph.
  - b. Solve for the displacement of the car during this time interval.
  
5. A car slows its velocity from 20 m/s to rest over a time of 4 seconds.
  - a. Create a qualitative graphs (no numbers) of X-T, V-T and A-T for the car's motion
  - b. Solve for the acceleration of the car
  - c. Solve for the displacement of the car
  
6. Turn the Acceleration vs. Time graph below into its corresponding X-T and V-T graphs.

*\*Note, there are two potential answers for each graph. Can you find both?*

