AP Physics 1
## Velocity Practice Problems

1.) At what speed does Trouble need to drive to cover 1500 m in 60 s?

2.) How far does a car, moving at 80 km/h travel in 1.5 hours?

3.) How long does it take for Bebop to walk 1200 meters if she is walking at 2 m/s?

4.) A car's odometer reads 22,687 km at the start of a trip and 22,791 km at the end. The trip took 4.0 hours. What was the car's average velocity?

5.) Rat runs race that is 800.0 m long. She runs the first 200.0 m in 30.0 s, the second 200 m in 25.0 s, the third 200 m in 30.0 s, and the final 200 m in 40.0 s. What was her average speed for the entire race?

6.) A van sputters along at an average speed of 8.0 m/s for 60 s, then zips along at an average speed of 24.0 m/s for another 60 s. Find the average speed for the entire 120 s.

7.) A van has a speed of 8.0 m/s while the traveling 480 m, followed by an average speed of 24.0 m/s for another 480 m. Find the average speed for the entire distance.

8.) Calculate the average speed and average velocity of a complete round-trip in which the outgoing 240 km is covered at 60 km/h, and the returning 240 km is covered at 40 km/h?

9.) Use the position-time graph below to complete the table. Show all calculations.

Position (m)
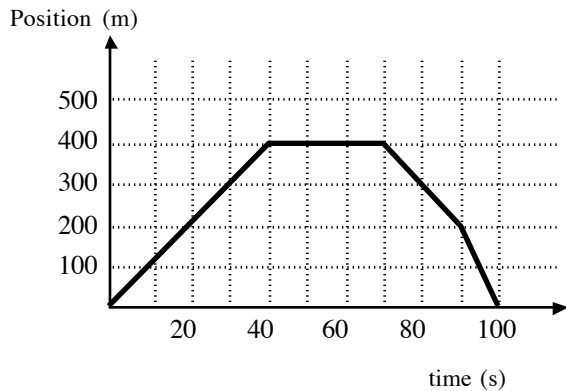
Time Interval (seconds)	Distance Traveled (meters)	Velocity (m/s)
0 to 40 s		
40 to 70 s		
70 to 90 s		
90 to 100 s		

time (s)

10.) Use the velocity-time graph below to complete the table. Show all calculations.
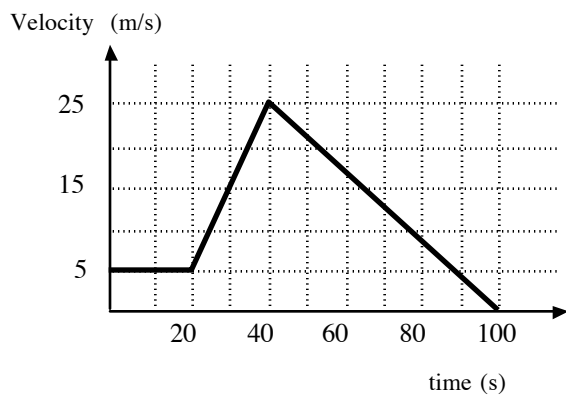
Velocity (m/s)

Time Interval (seconds)	Displacement (m)	Average Velocity (m/s)
0 to 20 s		
20 to 40 s		
40 to 100 s		
0 to 100 s		

time (s)

11.) A car travels east at 25 m/s for 10.0 minutes and then west at 30 m/s for 15 minutes.

   a.) Draw a diagram that illustrates the entire motion of the car. Clearly indicate initial, intermediate, and final positions and times. Show all calculations

   b.)   Find the car's average velocity for the entire trip.   c.)   Find the car's average speed for the entire trip.