

Motion Worksheet #3

1. What is the difference between speed and velocity?
2. Does the speedometer of a car read speed or velocity? Explain.
3. What two controls on a car cause a change in speed?
4. What control on a car can cause a change in velocity, without affecting speed? Explain.
5. What is the velocity of a plane that flies 602 m [E] in 2.50 s? Express your answer in terms of meters per second and kilometers per hour.
6. The tine on a tuning fork moves 1.0 mm to the right in 0.004 s. What is the velocity of the tine in meters per second?
7. An electron travels at a uniform velocity of 130 000 m/s. How much time is required for a displacement of 1.00 m?
8. A spaceship traveled at a uniform velocity of 32 000 km/h for 2.7 days. What was the displacement of the spaceship?
9. A hockey player's slapshot averages 51.5 m/s on its flight from the blue line to the goal, 20 m away. How long does the puck take to reach the goal?
10. A rally driver completes three consecutive sections of a straight rally course as follows: section 1 (10 km) in 7.50 min, section 2 (18 km) in 14.40 min, and section 3 (9.8 km) in 5.80 min. What was the average velocity for all three sections (assume no stops between sections)? (Hint: first find the total displacement)
11. If humans originated in Africa and migrated to other parts of the world, some time would be required for this to occur. At the modest rate of a mere one kilometer per year, how many centuries would it take for humans originating in Africa to migrate to China, some 10 000 km away?