Kinematics Homework Problems #1

p. 27 #2, 3, 7, 8, 13

Problems taken from the school's old textbook:
Giancoli, D. (1980). *Physics*, 2nd Ed. Englewood Cliffs, NJ: Prentice Hall.

Answers are provided at the bottom of the page.

2. At an average speed of 11.8 km/h, how far will a bicyclist travel in 175 minutes?

3. A bird can fly 30 km/h. How long does it take to fly 235 km?

7. A person jogs eight complete laps around a quarter-mile track in a total time of 10.5 minutes. Calculate (*a*) the average speed, and (*b*) the average velocity, in m/s.

8. A rock thrown horizontally at a large bell 50 m away is heard to hit the bell 4.5 s later. If the speed of sound is 330 m/s, what was the speed of the rock? (Disregard the effect of gravity – in other words, ignore any vertical deflection of the rock).

13. At high speeds, a particular automobile is capable of an acceleration of about 0.50 m/s^2. At this rate, how long does it take to accelerate from 90 km/h to 100 km/h?

Answers:

2. 34.4 km.
3. 8 hours
7a. 5.11 m/s
7b. zero
8. 11.5 m/s
13. 5.56 seconds