

Speed and Velocity Problems

1. A boy hops on his bike and rides 135 meters in 20 seconds. What is his average speed?
2. Calculate the time in seconds an Olympic skier would take to finish a 2.6 km race at an average velocity of 28 m/s downhill.
3. What is the velocity in meters per second of a sailboat that travels 150 m away from the shore in 17 seconds?
4. Find the velocity in m/s of a swimmer who swims exactly 100 m toward the shore in 72 seconds.
5. Calculate the distance in meters a cyclist would travel in 5.0 hours at an average velocity of 12.0 km/h.
6. Suppose the polar bear were running on land instead of swimming. If the polar bear runs at a speed of about 8.3 m/s, how far will it travel in 10.0 hours?
7. Like the polar bear, the walrus is a fine swimmer, though it does not have the same endurance. For short periods of time, a walrus can swim with an average speed of 9.7 m/s. How far would a walrus swim at this speed in 3.4 minutes?
8. The various types of tree sloths share the honor of being the slowest moving mammals. An average tree sloth moves with a speed of 0.743 m/s. How long does it take a sloth moving at this speed to travel 22.30 m?
9. The longest distance in a track and field event is the 10 km run. The record holder for the women's 10 km run is Wang Junxia of China. Assuming that Wang Junxia ran a distance of 10.00 km with an average speed of 5.644 m/s, what was her time? (Hint: Need to convert to the same units first.)

10. In 1985, Matt Biondi set a record for the men's 100 m freestyle event in swimming. It took him 49.17 s to swim the 50.0 m length of the pool and swim back. Assume that half of Biondi's record time was spent traveling the length of the pool. What was his speed?