

Honors Physics 2D Kinematics HW, part 2 (Homework)

For answers, send email to: admin@tutor-homework.com.

Include file name: Physics_Worksheet_0046

Price: \$3

(c) 2012 www.tutor-homework.com: Tutoring, homework help, help with online classes.

1.

A boat moves through the water of a river at 7 m/s relative to the water, regardless of the boat's direction. If the water in the river is flowing at 1.4 m/s, how long does it take the boat to make a round trip consisting of a 285 m displacement downstream followed by a 285 m displacement upstream?

2.

A river flows due east at 1.10 m/s. A boat crosses the river from the south shore to the north shore by maintaining a constant velocity of 9.0 m/s due north relative to the water.

(a) What is the velocity of the boat relative to shore?

(b) If the river is 290 m wide, how far downstream has the boat moved by the time it reaches the north shore?

3.

A rowboat crosses a river with a velocity of 3.30 mi/h at an angle 62.5° north of west relative to the water. The river is 0.505 mi wide and carries an eastward current of 1.25 mi/h. How far upstream is the boat when it reaches the opposite shore?

4.

The pilot of an aircraft wishes to fly due west in a 57.0 km/h wind blowing toward the south. If the speed of the aircraft relative to the air is 205 km/h,

(a) in what direction should the aircraft head, and

(b) what will be its speed relative to the ground?

5.

A hunter wishes to cross a river that is 2.3 km wide and flows with a speed of 5.0 km/h parallel to its banks. The hunter uses a small powerboat that moves at a maximum speed of 14 km/h with respect to the water. What is the minimum time necessary for crossing?