Crossing the River

Questions 1 - 5

The diagram below represents the north and south banks of stream that flows from west to east. The water flows at 3 m/s. The river is 28 meters wide. A boat leaves from dock A on the south bank. The speed of the boat is 4 m/s.



1. The boat is kept headed at the opposite shore while crossing the stream. Place an ‘X’ along the opposite shoreline at the place where the boat lands.
2. What is the speed of the boat as seen from a bridge overlooking the stream?
3. How long does it take the boat to cross the stream?
4. How far away from point ‘B’ does the boat land?
5. Use an arrow to show the direction the boat should be headed in order to land at dock ‘B’ directly across the stream from the starting location ‘A’.

Questions 6 - 11

A boat is rowed at 16 km/h directly across a river that is flowing downstream at 12 km/h East. The river is 48 km wide.

1. What is the speed of the boat as seen from the bank of the river?
2. How long will it take the boat to get across the river?
3. How far downstream will the boat land?
4. At what angle should the boat head if it wants to end up directly across the river?
5. Will it take longer or less time to cross the river in the previous example?
6. Determine the time it takes the boat to cross when it ends up directly across.