

## Wind and Current Problems

1. Suppose a motorboat travels at 10 km/h in still water. The boat makes a trip 30 km downstream and then comes back. The water current, however, is 5 km/h. How long will the trip take round trip? Find the average speed for the whole trip.
2. Suppose you can paddle a canoe in still water at 5 km/h and that you are going to travel 6 km up a river and 6 km back. If the river current is 1 km/h, find your total time and your average speed for the round trip.
3. Sam can paddle in still water at 6 mph. The Saco River is flowing at 2 mph. How far downstream can Sam travel if he must return in two hours?
4. A powerboat has a four-hour supply of gasoline. How far can this boat travel from the marina if the rate out against the current is 40 km/h and the rate back in with the current is 60 km/h?
5. A boat travels with the current at 22 km/h and travels against the current at 12 km/h. What is the rate of the boat in still water? What is the rate of the current?
6. Hal can swim upstream at 1 m/s and downstream at 2.5 m/s. How fast can he swim in still water? How fast is the current?
7. An airplane takes 3 hours to fly 1200 km against the wind. The return trip takes 2 hours. What would the speed of the plane be if there was no wind? What is the wind speed?
8. A boat can go 20 km downstream in 2 hours. The return trip takes 5 hours. What would the speed of the boat be if there were no current? What is the speed of the current?
9. The 4200 km trip from New York to San Francisco takes 6 hours flying against the wind but only 5 hours returning. Find the speed of the plane in still air and the wind speed.
10. The 1080 km trip from Madrid to Paris takes 2 hours flying against the wind and 1.5 hours flying with the wind. Find the speed of the plane in still air and the wind speed.
11. A motorboat goes 36 km downstream in the same amount of time that it takes to go 24 km upstream. If the current is flowing at 3 km/h, what is the rate of the boat in still water?
12. The rate of the current in the Susquehanna River is 4 km/h. If a canoeist can paddle 5 km downstream in the same amount of time that she can paddle 1 km upstream, how fast can she paddle in still water?

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13. The steamboat River Queen travels at the rate of 30 km/h in still water. If it can travel 45 km upstream in the same amount of time that it takes to go 63 km downstream, what is the rate of the current?

14. An airplane whose speed in still air is 760 km/h can travel 2000 km with the wind in the same amount of time that it takes to fly 1800 km against the wind. What is the wind speed?