

### PROBLEM 3 Are We There Yet?

A distance problem is a type of problem that involves distance, rate, and time.



1. A river barge travels 140 miles from a loading dock to a warehouse to deliver supplies. Then the barge returns to the loading dock. The barge travels with the current to the warehouse and against the current from the warehouse. The barge's total travel time is 20 hours, and it travels in still water at an average speed of 15 miles per hour.
  - a. Use the given information to complete the table. Let  $x$  represent the average speed of the current.

	Distance Traveled	Time Traveled	Average Speed
	Miles	Hours	$\frac{\text{Miles}}{\text{Hours}}$
With the Current			$15 + x$
Against the Current	140		
Round Trip		20	

- b. You are given that the barge's total travel time is 20 hours. Write an algebraic expression, in terms of the number of hours the barge travels with the current and the number of hours it travels against the current, that is equivalent to 20 hours.



- c. Write and solve an equation to calculate the average speed of the current.

