Name _____ Date _____ Period _____

ADDING VECTORS

Find the vector sum for each of the following situations.

1. F_1 is 75 N acting at 25^o and F_2 is 105 N acting at 95^o
2. F_1 is 150 N acting at 195^o and F_2 is 35 N acting at 55^o
3. F_1 is 120 N acting at 30^o S of W and F_2 is 80 N acting at 45^o
4. F_1 is 190 N acting at 25^o E of S and F_2 is 300 N acting at 80^o W of S

Solve the following river problems.

A boat is able to travel at 5 m/s in still water. You are trying to cross a 500 m wide river with parallel banks that has a current of 3 m/s.

5. How long does it take to cross the river?
6. How far down stream do you land?
7. What is your resultant velocity? Hint: you need both magnitude and direction.
8. If you decide to go directly upstream, what is your velocity relative to the bank?
9. A boat is able to travel at 9 m/s in still water. You are trying to go directly across a river with parallel banks that has a downstream current of 5 m/s. What is your resultant velocity?
10. What angle do you need to aim your boat to land directly across the river from your launching position?