Assignment 12 (4/29)

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Problem 1

Problems 11.2.$(1-8, 15, 16, 18, 21)$.

Problem 2

A canoeist can paddle at 1 unit/sec in still water. He wants to cross a river 10 units wide. The river is flowing due east at 1.5 units/sec between parallel banks. Assume that the canoeist starts paddling at a point on the south bank.

1. Suppose the canoeist wants to get to the other side by paddling for the **least distance**. Then how much time will it take him?

   [HINT: The least distance he can travel to get to the other bank is the length of perpendicular distance between the two banks.]

2. Suppose the canoeist wants to paddle for the **least amount of time** to get to the opposite bank. Then what direction should he paddle?

   [HINT: The time needed to cross the river depends only on the perpendicular (to the banks) component of the net velocity of the canoeist.]

3. In the second case, **how far** does he have to paddle?