Name: _____

Physics 201 Quiz 2

Jan 23, 2013

Word Problems

Show all your work and circle your final answer. (Ten points each.)

1. A sailboat race course consists of four legs, defined by the displacement vectors $\vec{A}$, $\vec{B}$, $\vec{C}$, and $\vec{D}$, as the drawing indicates. The magnitudes of the first three vectors are $\vec{A} = 3.20$ km, $\vec{B} = 5.10$ km, and $\vec{C} = 4.80$ km. The finish line of the course coincides with the starting line. Using the data in the drawing, find the distance of the fourth leg and the angle θ.

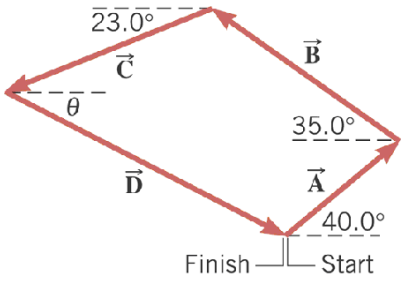

Figure 1: Problem 1.47

2. A mountain climber, in the process of crossing between two cliffs by a rope, pauses to rest. She weighs 535 newtons. As Figure 2 shows, she is closer to the left cliff than to the right cliff, with the result that the tension in the left and right sides of the rope are not the same. Find the tensions in the rope to the left and to the right of the mountain climber.

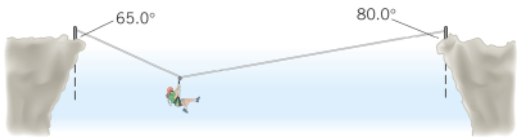

Figure 2: Problem 4.62