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PHYS 1210 Group work: Inertia and Equilibrium

1. Ada walks at a speed of 1.0 m/s, and Bri rows a boat at a speed of 1.0 m/s (relative to the water). The stream flows at a steady speed of 0.10 m/s.
   a. Ada walks downstream to a point 1.0˚km from where she started, while Bri rows downstream to the same point. Who arrives in the least time?

   b. Ada walks back upstream to her starting point, and Bri rows upstream back to the same point. Who arrives in the least time?

   c. Who completes the trip downstream and back in the least time?

2. When a person with mass *m* lies in a hammock whose supports are 8 m apart, the center of the hammock hangs 1 m below the supports. We want to find the tension in the ropes holding the hammock.
   a. The forces acting on the hammock add to zero. What are the forces? What are their directions?

   b. What is the *vertical* component of the tension in each rope?

   c. What is the *horizontal* component of the tension in each rope?