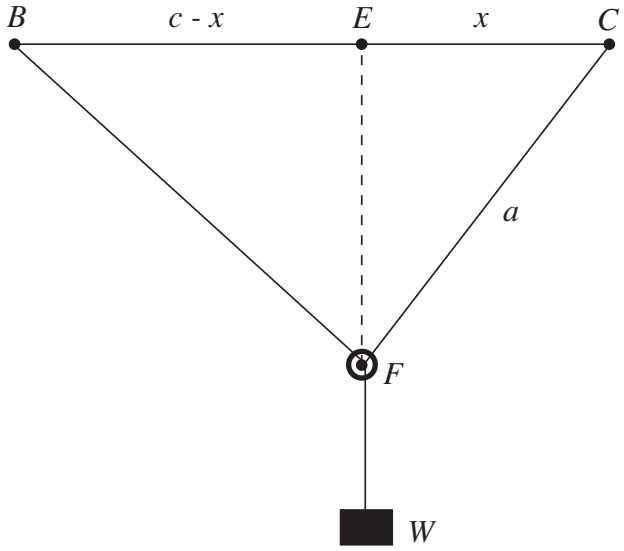
Quiz **Name**

1. In the diagram below, BC is a horizontal surface with points B and C a distance c from each other. A string CF of length a is attached to the point C and has a pulley affixed to its other end at F. Another string is attached at B, runs over the pulley at F, and has a weight W attached to its other end. The system is in equilibrium. The strings and pulley are of negligible weight. What evidence can you present that the equilibrium position of the configuration ΔBCF is the same no matter how heavy W is.



2. Consider the pulley system of De L'Hospital. Assume that $BC = 6$ feet, $CF = 4$ feet, and the weight is 100 pounds. Determine the following quantities:

a. The lengths BE and EC .

b. The angles θ_1 (at B) and θ_2 (at C).

c. The tensions T_1 and T_2 in cable segments BF and CF, respectively.