Homework Problem H8.C

Given: Consider the mechanism shown below made up of links AB and BC. BC is connected to a slider at end C, with the slider constrained by a rough horizontal guide (μ_S is the coefficient of static friction between the slider and the guide). A vertical load F is applied at the midpoint of link AB. The weights of the links and slider in the mechanism are to be considered negligible as compared to the applied load.

Find:

a) Determine the friction force acting on the slider at C by the horizontal guide in order to maintain equilibrium of the mechanism. Express your answer in terms of the applied load *F*.

b) Determine the numerical value for the minimum μ_S required to keep the mechanism in equilibrium.