***Homework H9.A***

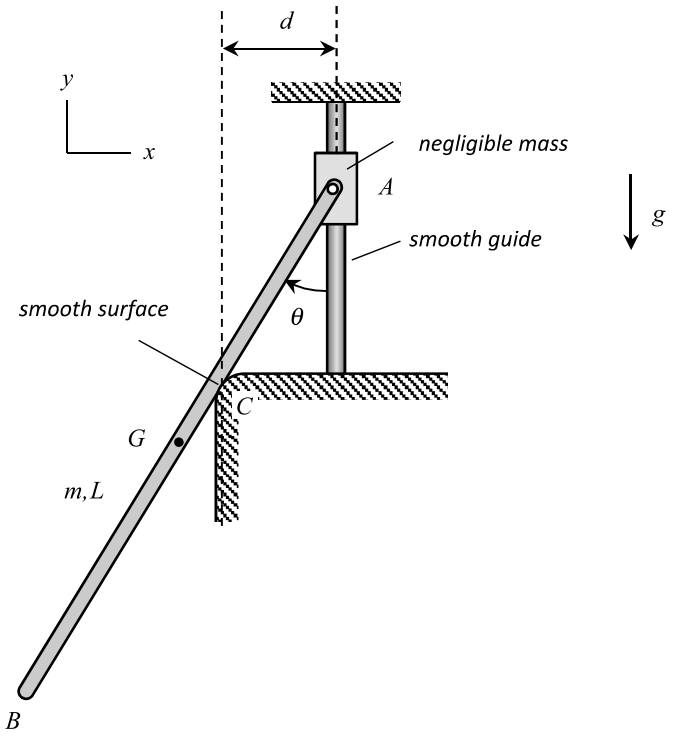
***Given***: A thin, homogeneous bar of length L and mass m is supported by a collar on a smooth vertical guide at end A and by contact with a smooth, surface at C, as shown in the figure.

***Find***: Determine the angle $\theta$ at which the bar is in static equilibrium.

Leave your answer in terms of, at most, *m*, *L, d* and *g*.

HINT: The contact force on the bar at C is perpendicular to the surface of the bar since the surface is smooth.

**Fig. PH09A.M270**



***Homework H9.B***

***Given***: An L-shaped bent bar is supported by smooth rollers at ends A and C, and by cable DE at E. A horizontal force *F* acts on the bar at location H. The weight of the bar is negligible compared to the load *F*.

***Find***: Determine the reactions on the bar at A and C, and the tension in cable DE. Express your answers in terms of *F*.

**Fig. PH09B.M270**