Problem 1
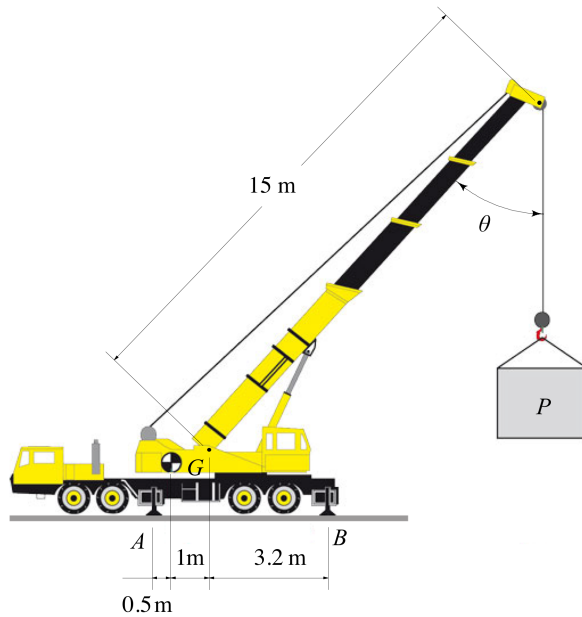
The mobile crane shown is supported by outriggers at A and B and weighs 108 kN, with a center of gravity at G.   What is the maximum angle θ that the boom can make with the vertical without tipping over when lifting a load $P = 40$ kN?

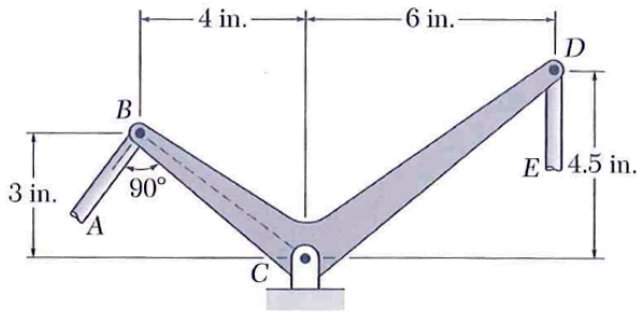## Problem 2

A force and a couple are applied to the inverted L-shaped member. Neglect the weight of the
member. Determine the reactions necessary for equilibrium at
(a) the pin *A* and, *(b)* the roller at *B*.
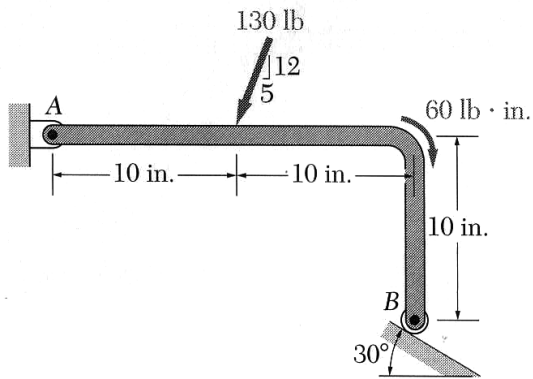
Two links *AB* and *DE* are connected by a bell crank as shown. Knowing that the tension in link *AB* is 150 lb, determine the tension in link *DE* and the reaction at *C*.

Two links *AB* and *DE* are connected by a bell crank as shown. Determine the maximum force which may be safely exerted by link *AB* on the bell crank if the maximum allowable value for the reaction at *C* is 400 lb.