



Dimensions in inches

FIGURE P11-3

Problem 11-8

- †11-8 Figure P11-3 shows a fourbar linkage and its dimensions. The steel crank and rocker have uniform cross sections 1 in wide by 0.5 in thick. The aluminum coupler is 0.75 in thick. In the instantaneous position shown, the crank O_2A has $\omega = 40$ rad/sec and $\alpha = -20$ rad/sec². There is a horizontal force at P of $F = 50$ lb. Find all pin forces and the torque needed to drive the crank at this instant.

† These problems are suited to solution using *Mathcad*, *Matlab*, or *TKSolver* equation solver programs.