

Name ..... ID ..... sec .....

HW6: In order to unscrew the tapped faucet  $A$ , a plumber used two pipe wrenches as shown. By exerting a 30-N force on each wrench, at a distance of 0.4 m from the axis of the pipe and in a direction perpendicular to the pipe and to the wrench, he prevents the pipe from rotating, and thus avoids loosening or further tightening the joint between the pipe and the tapped elbow  $C$ . Determine (a) the angle  $\theta$  that the wrench at  $A$  should form with the vertical if elbow  $C$  is not to rotate about the vertical, (b) the force-couple system at  $C$  equivalent to the two 30-N forces when this condition is satisfied.

