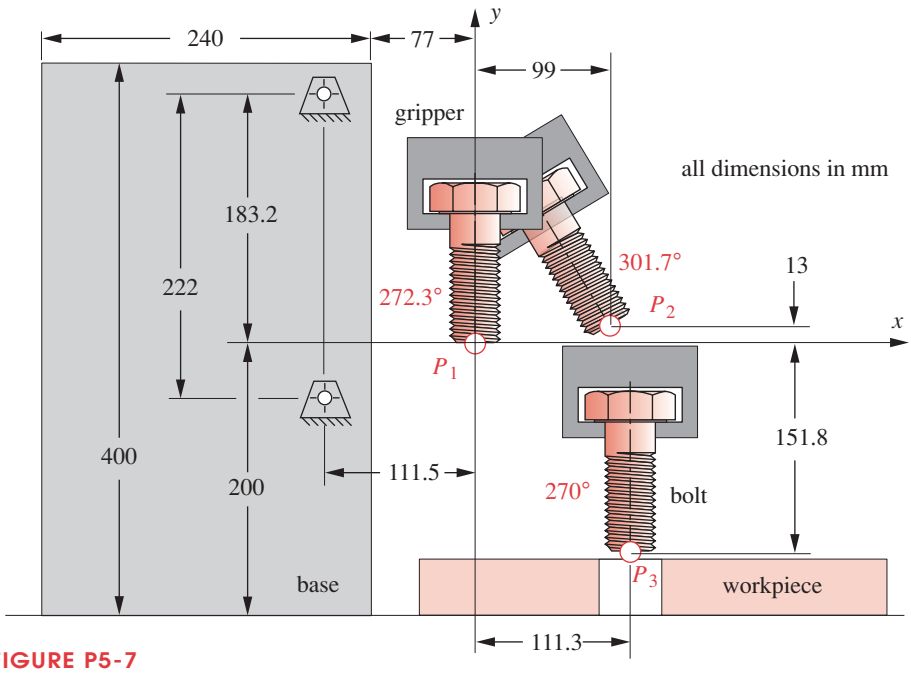

FIGURE P5-7

Data for Problems 5-34 to 5-36

†5-34 Design a fourbar linkage to carry the bolt in Figure P5-7 from positions 1 to 2 to 3 without regard to the fixed pivots shown. The bolt is fed into the gripper in the *z* direction (into the paper). The gripper grabs the bolt, and your linkage moves it to position 3 to be inserted into the hole. A second degree of freedom within the gripper assembly (not shown) pushes the bolt into the hole. Extend the gripper assembly as necessary to include the moving pivots. The fixed pivots should be on the base. Hint: Try guess values of $\beta_2 = 70°$, $\beta_3 = 140°$, $\gamma_2 = -5°$, $\gamma_3 = -49°$.

*†5-35 Design a fourbar linkage to carry the bolt in Figure P5-7 from positions 1 to 2 to 3 using the fixed pivot locations shown. Extend the gripper assembly as necessary to include the moving pivots. See Problem 5-34 for more information.

5-36 To the linkage solution from Problem 5-35, add a driver dyad with a crank to control the motion of your fourbar so that it cannot move beyond positions one and three.

* Answers in Appendix F.

† These problems are suited to solution using *Mathcad, Matlab,* or *TKSolver* equation solver programs. In most cases, your solution can be checked with program FOURBAR, SLIDER, or SIXBAR.