FIGURE P5-1

Data for Problems 5-8 to 5-11

*†5-8 Design a linkage to carry the body in Figure P5-1 through the two positions P_1 and P_2 at the angles shown in the figure. Use analytical synthesis without regard for the fixed pivots shown. Hint: Try the free choice values $z = 1.075$, $\phi = 204.4°$, $\beta_2 = -27°$; $s = 1.24$, $\psi = 74°$, $\gamma_2 = -40°$.

†5-9 Design a linkage to carry the body in Figure P5-1 through the two positions P_2 and P_3 at the angles shown in the figure. Use analytical synthesis without regard for the fixed pivots shown. Hint: First try a rough graphical solution to create realistic values for free choices.

†5-10 Design a linkage to carry the body in Figure P5-1 through the three positions P_1, P_2, and P_3 at the angles shown in the figure. Use analytical synthesis without regard for the fixed pivots shown. Hint: Try the free choice values $\beta_2 = 30°$, $\beta_3 = 60°$; $\gamma_2 = -10°$, $\gamma_3 = 25°$.

*†5-11 Design a linkage to carry the body in Figure P5-1 through the three positions P_1, P_2, and P_3 at the angles shown in the figure. Use analytical synthesis and design it for the fixed pivots shown.

* 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.