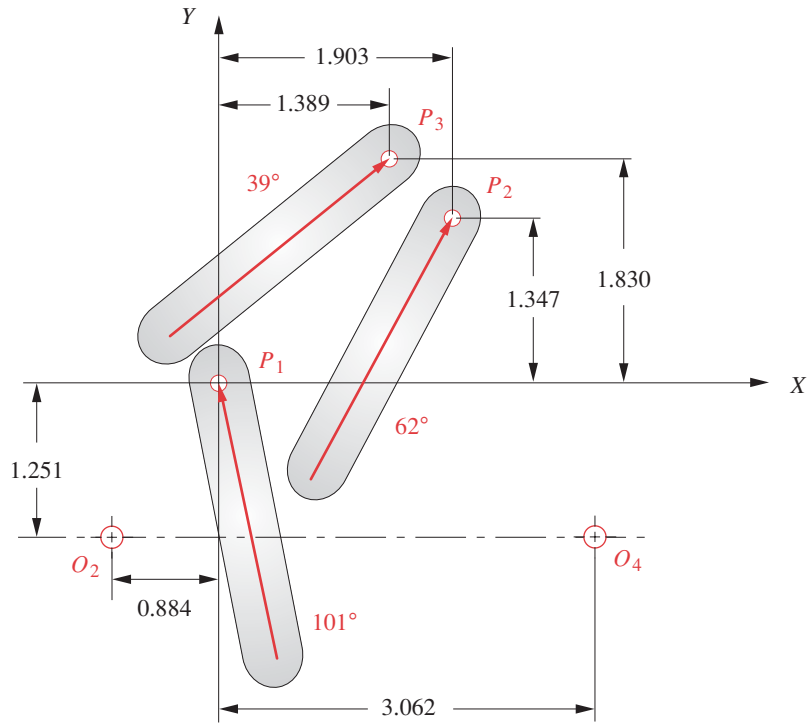

FIGURE P5-2

Data for Problems 5-12 to 5-15

†5-12 Design a linkage to carry the body in Figure P5-2 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 $z = 2$, $\phi = 150°$, $\beta_2 = 30°$; $s = 3$, $\psi = -50°$, $\gamma_2 = 40°$.

†5-13 Design a linkage to carry the body in Figure P5-2 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.

†5-14 Design a linkage to carry the body in Figure P5-2 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.

*†5-15 Design a linkage to carry the body in Figure P5-2 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.