$L_1 = 2.72$ in
$L_2 = 5.52$ in
$L_3 = 4.88$ in
$L_4 = 6.48$ in

FIGURE P12-14

Problems 12-35 and 12-36

†‡12-35   Figure P12-14 shows a fourbar linkage and its dimensions in inches. All links are 0.08-in-thick steel and have a uniform cross-section of 0.26-in wide x 0.12-in thick. Links 2 and 4 have rounded ends with a 0.13-in radius. Link 3 has squared ends that extend 0.13-in from the pivot point centers. Design counterweights to force balance the linkage using the method of Berkof and Lowen.

†‡12-36   Use the data of Problem 12-35 to design the necessary balance weights and other features to completely eliminate the shaking force and shaking moment the linkage exerts on the ground link.

† 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.