FIGURE P7-28

Problems 7-72 to 7-73 An aircraft overhead bin mechanism - dimensions in inches

7-72   Find the angular accelerations of links 3 and 4, and the linear acceleration of point P in the XY coordinate system for the linkage in Figure P7-28 (p. 374) in the position shown. Assume that $\theta_2 = -88.72°$ in the XY coordinate system, $\omega_2 = 1$ rad/sec, and $\alpha_2 = 10$ rad/sec^2. The position of the coupler point P on link 3 with respect to point A is: $p = 15.00$, $\delta_3 = 0°$.

    a.   Using a graphical method.
    †b.   Using an analytical method.

†7-73   For the linkage in Figure P7-28 (p. 374), write a computer program or use an equation solver such as *Mathcad, Matlab,* or *TKSolver* to calculate and plot the angular velocity and acceleration of links 2 and 4, and the magnitude and direction of the velocity and acceleration of point P as a function of θ_2 through its possible range of motion starting at the position shown. The position of the coupler point P on link 3 with respect to point A is: $p = 15.00$, $\delta_3 = 0°$. Assume that, @ $t = 0$, $\theta_2 = -88.72°$ in the XY coordinate system, $\omega_2 = 0$, and $\alpha_2 = 10$ rad/sec^2, constant.

† 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.