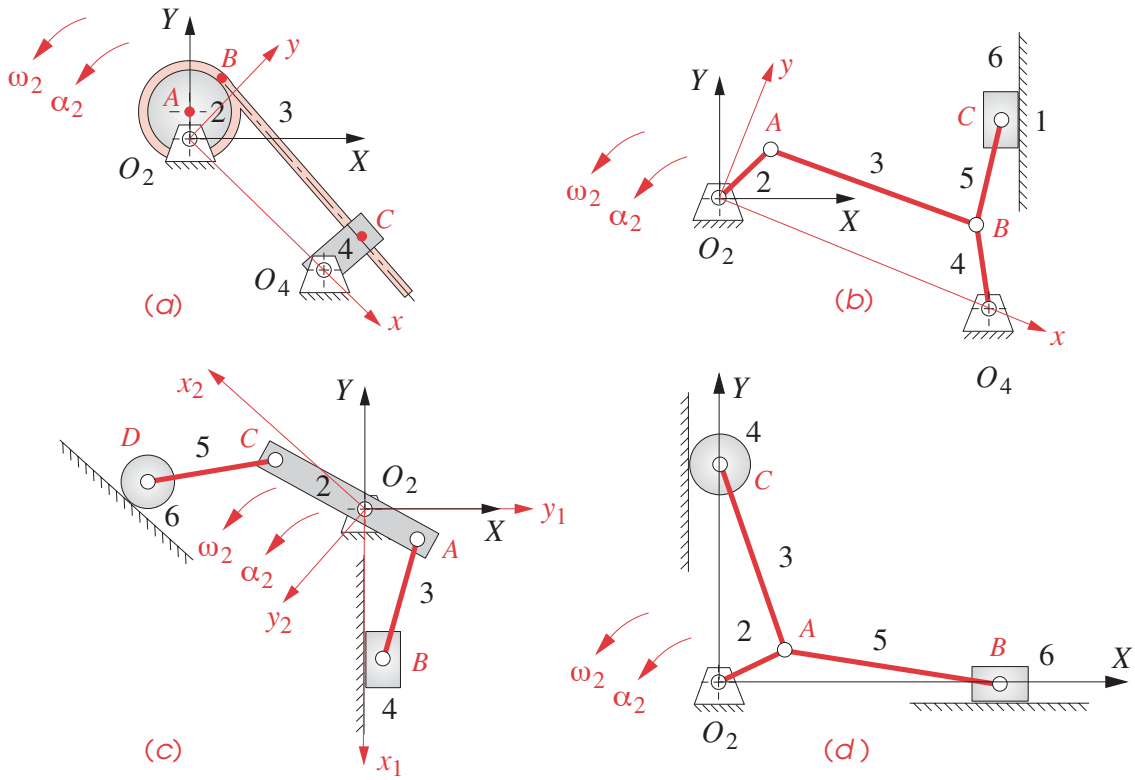

FIGURE P7-6

Problems 7-16 to 7-19

†7-16 The linkage in Figure P7-6a has $O_2A = 5.6$, $AB = 9.5$, $O_4C = 9.5$, $L_1 = 38.8$ mm. θ_2 is 135° in the xy coordinate system. Write the vector loop equations; differentiate them, and do a complete position, velocity, and acceleration analysis of the linkage. Assume $\omega_2 =$ 10 rad/sec and $\alpha_2 = 20$ rad/sec^2.

†7-17 Repeat Problem 7-16 for the linkage shown in Figure P7-6b which has the dimensions: $L_1 = 61.9$, $L_2 = 15$, $L_3 = 45.8$, $L_4 = 18.1$, $L_5 = 23.1$ mm. θ_2 is 68.3° in the xy coordinate system, which is at –23.3° in the XY coordinate system. The X component of O_2C is 59.2 mm.

†7-18 Repeat Problem 7-16 for the linkage shown in Figure P7-6c which has the dimensions: $O_2A = 11.7$, $O_2C = 20$, $L_3 = 25$, $L_5 = 25.9$ mm. Point B is offset 3.7 mm from the x_1 axis and point D is offset 24.7 mm from the x_2 axis. θ_2 is at 13.3° in the x_2y_2 coordinate system.

†7-19 Repeat Problem 7-16 for the linkage shown in Figure P7-6d which has the dimensions: $L_2 = 15$, $L_3 = 40.9$, $L_5 = 44.7$ mm. θ_2 is 24.2° in the XY coordinate system.

* 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.