



FIGURE P7-2

Configuration and terminology for problems 7-5 to 7-6 and 7-58

- *7-5 The link lengths and offset and the values of θ_2 , ω_2 , and α_2 for some noninverted, offset fourbar slider-crank linkages are defined in Table P7-2. The general linkage configuration and terminology are shown in Figure P7-2. For the row(s) assigned, draw the linkage to scale and graphically find the accelerations of the pin joints A and B and the acceleration of slip at the sliding joint.
- *†7-6 Repeat problem 7-5 using an analytical method.
- †7-58 Write a program using an equation solver or any computer language to solve for the displacements, velocities, and accelerations in an offset slider-crank linkage as shown in Figure P7-2. Plot the variation in all link's angular and all pin's linear positions, velocities, and accelerations with a constant angular velocity input to the crank over one revolution for both open and crossed configurations of the linkage. To test the program, use data from row a of Table P7-2. Check your results with program SLIDER.

* 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 SLIDER.

TABLE P7-2 Data for Problems 7-5 and 7-6

Row	Link 2	Link 3	Offset	θ_2	ω_2	α_2
a	1.4	4	1	45	10	0
b	2	6	-3	60	-12	5
c	3	8	2	-30	-15	-10
d	3.5	10	1	120	24	-4
e	5	20	-5	225	-50	10
f	3	13	0	100	-45	50
g	7	25	10	330	100	18