



FIGURE P9-5

Problems 9-35 to 9-36 From P. H. Hill and W. P. Rule. (1960), *Mechanisms: Analysis and Design*, with permission

*†9-35 Figure P9-5a shows a compound epicyclic train used to drive a winch drum. Gear A is driven at 20 rpm CW and gear D is fixed to ground. The tooth numbers are indicated in the figure. Determine the speed and direction of the drum. What is the efficiency of this train if the basic gearsets have $E_0 = 0.98$?

†9-36 Figure P9-5b shows a compound epicyclic train. The arm is driven CCW at 20 rpm. Gear A is driven CW at 40 rpm. The tooth numbers are indicated in the figure. Find the speed of the ring gear D.

* Answers in Appendix F.

† These problems are suited to solution using *Mathcad*, *Matlab*, or *TKSolver* equation solver programs.