

**FIGURE P12-6**

Problem 12-16

- ^{*†}12-16 Figure P12-6 shows a system with three weights on a rotating shaft. $W_1 = 6 \text{ lb @ } 120^\circ$ at a 5-in radius, $W_2 = 12 \text{ lb @ } 240^\circ$ at a 4-in radius, and $W_3 = 9 \text{ lb @ } 300^\circ$ at a 8-in radius. Determine the magnitudes and angles of the balance weights needed to dynamically balance the system. The balance weights in planes 4 and 5 are placed at a 4s-in radius.

* Answers in Appendix F.

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