3. This problem is very similar to a problem we solved in an Chapter 3 for linear motion in which an object starting from rest experienced a constant acceleration. We can use the expression for angular velocity that is analogous to that for linear velocity as expressed in Table 8.1 on page 137 in the text.

$$\omega = \omega_o + \alpha t$$

$$\omega = 0 + (2.0 \text{ rad} / s^2)(5 s^2)$$

$$\omega = 10.0 \text{ rad} / s$$

We know that one revolution is equal to 2π radians, so we convert to rev / s by dividing by 2π.

$$\omega = (10.0 \text{ rad} / s)(1 \text{ rev} / 2\pi \text{ rad})$$

$$\omega = 1.59 \text{ rev} / s$$