4. A Ferris wheel rotates at an angular velocity of 0.24 rad/s. Starting from rest, it reaches its operating speed with an average angular acceleration of 0.030 rad/s^2. How long does it take the wheel to come up to operating speed?

$$\bar{\alpha} = \frac{\Delta \omega}{\Delta t}$$

$$\Delta t = \frac{\Delta \omega}{\bar{\alpha}} = \frac{\omega_f - \omega_0}{\bar{\alpha}} = \frac{0.24\ {}^{rad}/_{s} - 0\ {}^{rad}/_{s}}{0.030\ {}^{rad}/_{s^2}} = 8.00\ s$$

$$\boxed{\Delta t = 8.0\ s}$$

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This page last updated on November 18, 2021