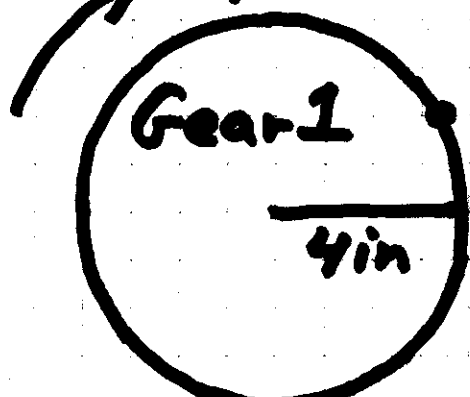


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$$\omega_1 = \frac{2 \text{ rev}}{1 \text{ min}} \cdot \frac{2\pi}{1 \text{ rev}}$$
$$\omega_1 = 4\pi \frac{\text{rad}}{\text{min}}$$

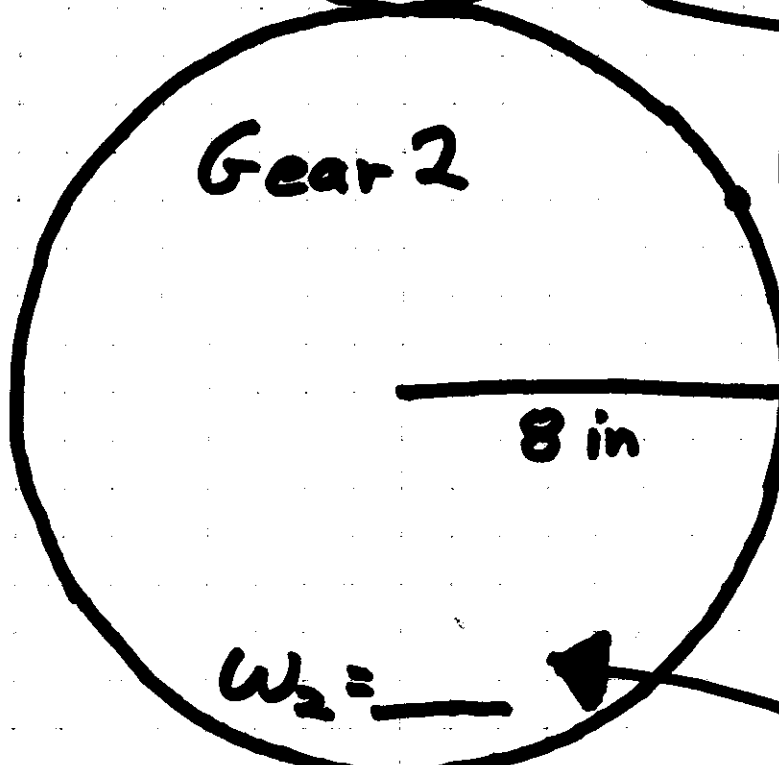
$\omega_1 = 2 \text{ RPM}$



$V_1 = \underline{\hspace{2cm}}$

$$\therefore V_1 = r_1 \omega_1 = (4 \text{ in}) \left(\frac{4\pi}{1 \text{ min}} \right)$$

$V_1 = 16\pi \text{ in/min}$



$V_2 = \underline{\hspace{2cm}}$

$$V_2 = r_2 \omega_2 = (8 \text{ in}) \left(2\pi \frac{\text{rad}}{\text{min}} \right)$$

$V_2 = 16\pi \frac{\text{in}}{\text{min}}$

$$\omega_2 = \omega_1 \frac{\text{Drive gear size}}{\text{Driven gear size}}$$

$\omega_2 = \left(\frac{2 \text{ Rev}}{1 \text{ min}} \right) \left(\frac{4}{8} \right) = 1 \frac{\text{REV}}{1 \text{ min}}$

or

$$\omega_2 = \frac{1 \text{ Rev}}{1 \text{ min}} \cdot \frac{2\pi \text{ rad}}{1 \text{ rev}} = 2\pi \text{ Radians/min}$$