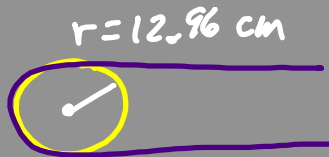


11



$$\frac{56 \text{ cm}}{18 \text{ sec}}$$

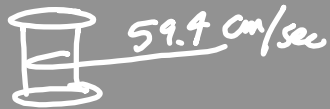
$$\omega = \frac{\theta}{t}$$

$$v = \frac{s}{t} = \frac{r\theta}{t} = r \cdot \omega$$

$$\frac{56}{18} = 12.96 \cdot \omega$$

$$0.24 \frac{\text{rad}}{\text{sec}} = \omega$$

12



$$152 \frac{\text{rev}}{\text{min}} \cdot \frac{1 \text{ min}}{60 \text{ sec}} = \frac{38}{15} \frac{\text{rev}}{\text{sec}}$$

$$V = 59.4 \frac{\text{cm}}{\text{s}}$$

$$\omega = \frac{76\pi}{15} \frac{\text{rad}}{\text{sec}}$$

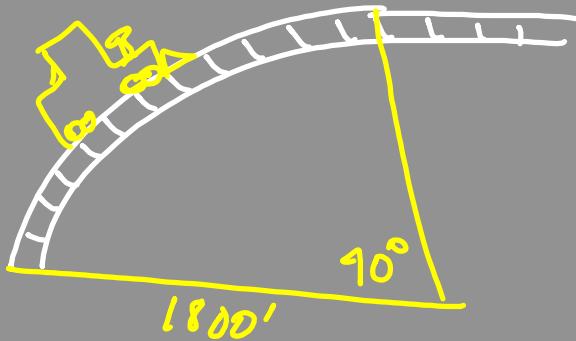
$$V = r \cdot \omega$$

$$59.4 \frac{\text{cm}}{\text{s}} = r \cdot \frac{76\pi}{15} \frac{\text{rad}}{\text{s}}$$

$$\frac{59.4}{\frac{76\pi}{15}} \frac{\frac{\text{cm}}{\text{s}}}{\frac{\text{rad}}{\text{s}}} = r$$

$$3.73 \text{ cm} = r$$

B.



$$r_{\text{train}} = 30 \frac{\text{mi}}{\text{hr}} \cdot \frac{5280 \text{ ft}}{1 \text{ mi}} \cdot \frac{1 \text{ hr}}{3600 \text{ sec}}$$

$$v = 44 \frac{\text{ft}}{\text{s}}$$

$$v = \frac{r \cdot \theta}{t}$$

$$t \cdot 44 = \frac{1800 \cdot \frac{40\pi}{180} \cdot r}{t}$$

$$t = \frac{1800 \cdot \frac{40\pi}{180}}{44}$$

$$t = 29 \text{ sec}$$