

$$d(t) = 5 \cos \frac{\pi}{6} t + 8$$

$$SA \Rightarrow y = 8$$

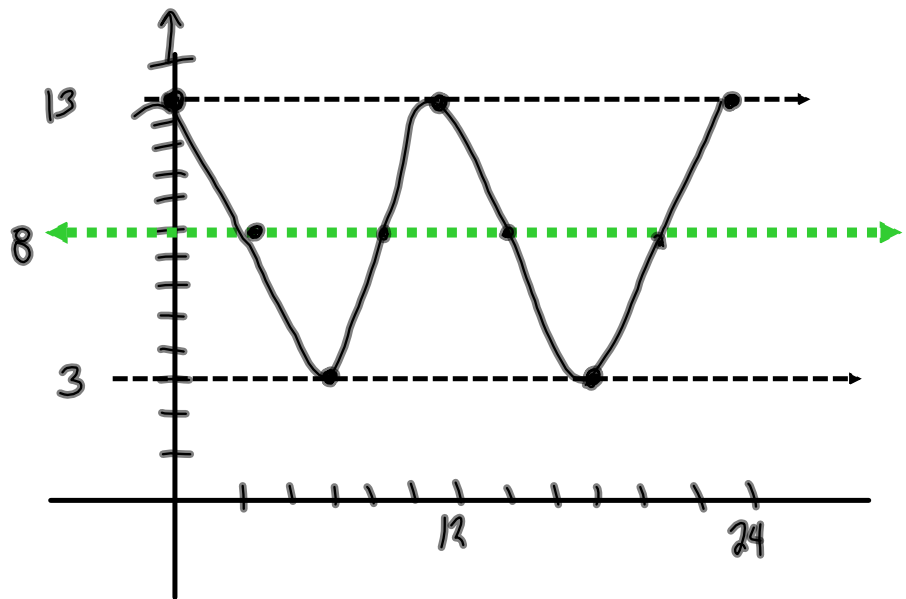
$$\text{Amp} = 5$$

$$\text{max: } 13$$

$$\text{min: } 3$$

$$HS: \frac{6}{\pi}$$

$$\begin{aligned} \text{period} &= 2\pi \cdot \frac{6}{\pi} \\ &= 12 \end{aligned}$$

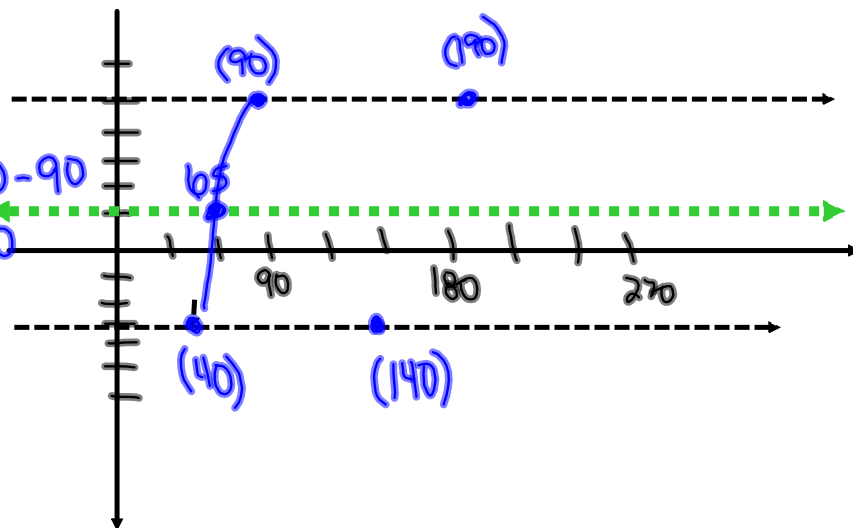


Amplitude 4, max point (90, 5) and nearest max point to the right at (190, 5)

$$SA = 1$$

$$\text{Period: } 190 - 90 = 100$$

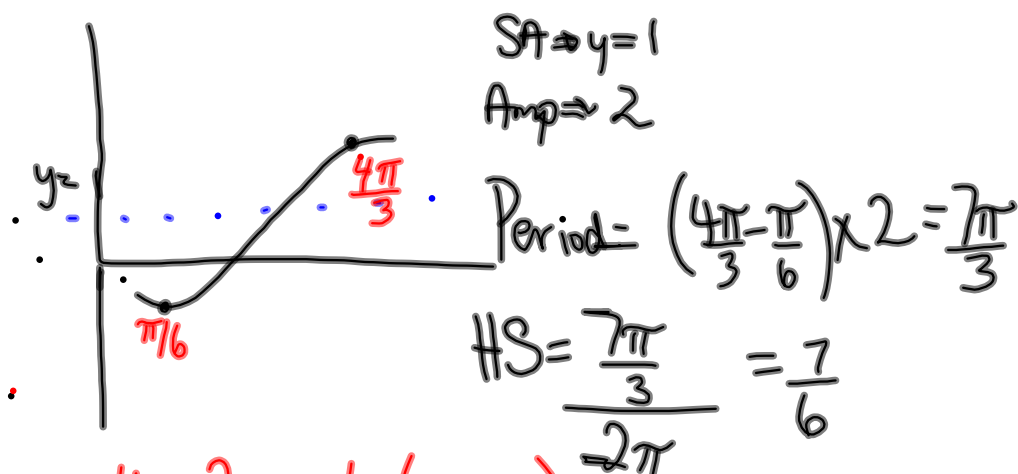
$$HS = \frac{100}{2\pi} = \frac{50}{\pi}$$



$$y = 4 \cos \frac{\pi}{50} (x - 90) + 1$$

$$y = 4 \sin \frac{\pi}{50} (x - 65) + 1$$

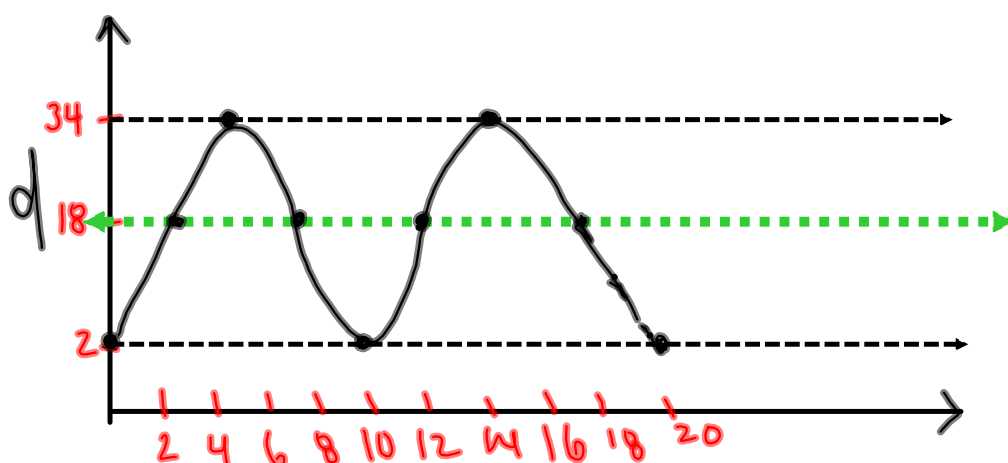
Min point $\left(\frac{\pi}{6}, -1\right)$ and nearest max point to the right at $\left(\frac{4\pi}{3}, 3\right)$



$$y = 2 \cos \frac{6}{7} \left(x - \frac{4\pi}{3}\right) + 1$$

$$y = 2 \sin \frac{6}{7} \left(x - \frac{3\pi}{4}\right) + 1$$

A ferris wheel has a radius of 16 metres and makes 6 revolutions in a minute. Its axle is located 18 metres above the ground. Your ride starts at the bottom of the wheel.



$$y = 16 \cos \frac{\pi}{5} (x - 5) + 18$$

$$HS = \frac{10}{2\pi} = \frac{5}{\pi}$$

$$y = 16 \sin \frac{\pi}{5} (x - 2.5) + 18$$

