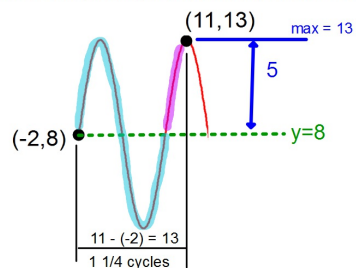


Tuesday, May 5, 2020

Continue with Periodic Functions and their graphs

For the remaining graphs the coordinates given will either represent a **max**, a **min**, or a point on the **midline**.

Find the Amplitude, Eq of Midline, and the Period.

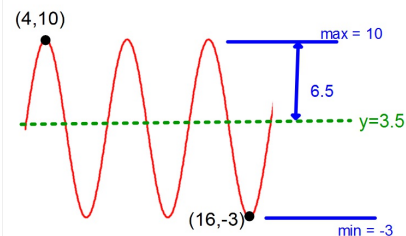


EQ of Midline: $y = 8$

Amplitude: $13 - 8 = 5$

$$\begin{aligned} \text{Period} &= \frac{\text{Total width}}{\# \text{ cycles}} \\ &= \frac{13}{1 \frac{1}{4}} = \frac{13}{\frac{5}{4}} \\ &= 13 \cdot \frac{4}{5} = \frac{52}{5} \end{aligned}$$

Find the Amplitude, Eq of Midline, and the Period.



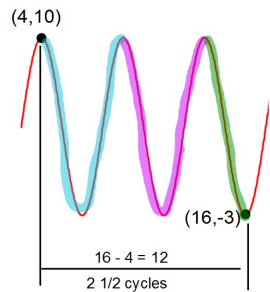
EQ of Midline:

$$\begin{aligned} y &= \frac{\text{max} + \text{min}}{2} = \frac{10 + (-3)}{2} \\ &= \frac{7}{2} = 3.5 \end{aligned}$$

Amplitude:

$$\begin{aligned} \frac{\text{max} - \text{min}}{2} &= \frac{10 - (-3)}{2} \\ &= \frac{13}{2} = 6.5 \end{aligned}$$

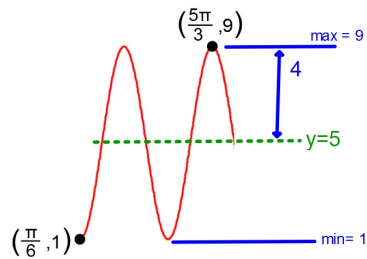
Period: see next page



$$\begin{aligned} \text{Period} &= \frac{\text{Total width}}{\# \text{ cycles}} \\ &= \frac{12}{2 \frac{1}{2}} = \frac{12}{\frac{5}{2}} \\ &= 12 \cdot \frac{2}{5} = \boxed{\frac{24}{5}} \end{aligned}$$

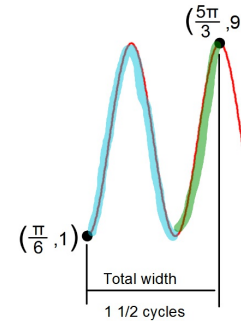
Many times the x-coordinates will be fractions in terms of π

Find the Amplitude, Eq of Midline, and the Period.



$$\begin{aligned} \text{Amplitude: } \frac{\text{max} - \text{min}}{2} &= \frac{9 - 1}{2} = \frac{8}{2} = \boxed{4} \\ \text{EQ of Midline: } y &= \boxed{5} \\ y &= \frac{\text{max} + \text{min}}{2} = \frac{9 + 1}{2} \\ &= \frac{10}{2} = \boxed{5} \end{aligned}$$

Period: see next page



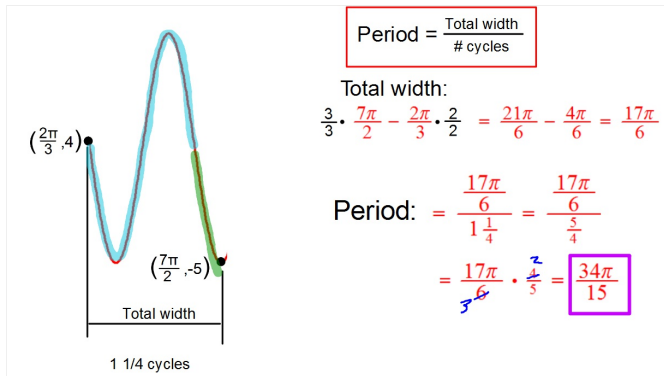
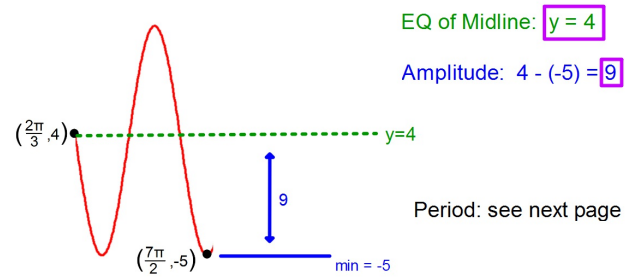
$$\text{Period} = \frac{\text{Total width}}{\# \text{ cycles}}$$

Total width:

$$\frac{2}{2} \cdot \frac{5\pi}{3} - \frac{\pi}{6} = \frac{10\pi}{6} - \frac{\pi}{6} = \frac{9\pi}{6} = \frac{3\pi}{2}$$

$$\begin{aligned} \text{Period: } &= \frac{\frac{3\pi}{2}}{1 \frac{1}{2}} = \frac{\frac{3\pi}{2}}{\frac{3}{2}} \\ &= \frac{3\pi}{2} \cdot \frac{2}{3} = \boxed{\pi} \end{aligned}$$

Find the Amplitude, Eq of Midline, and the Period.



You can now finish the remainder of Practice #24.

Practice #24 will be due on Thursday, May 7 by 10:00pm