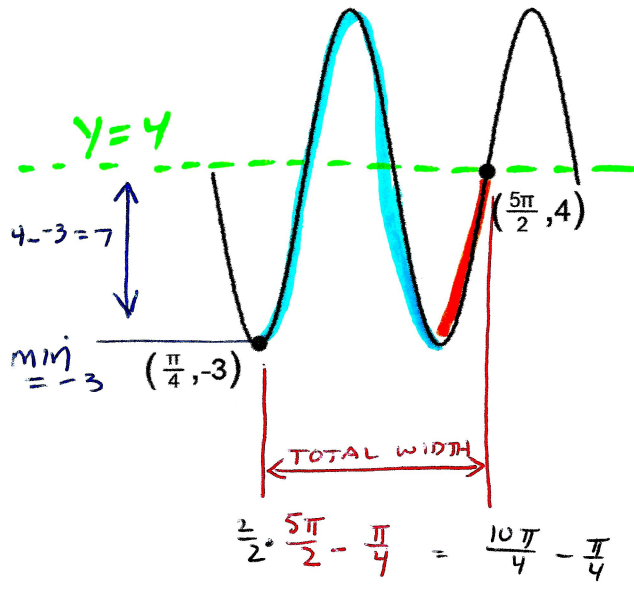


1. Find the Amplitude, Equation of the Midline, and Period for the graph of each Sine function.

1.



Amplitude: $= 7$

Eq of Midline: $y=4$

Period: $\frac{\text{TOTAL WIDTH}}{\# \text{ cycles}} = \frac{9\pi/4}{1\frac{1}{4}} = \frac{9\pi}{\frac{5}{4}} = \frac{9\pi}{5} \cdot \frac{4}{4} = \frac{9\pi}{5}$

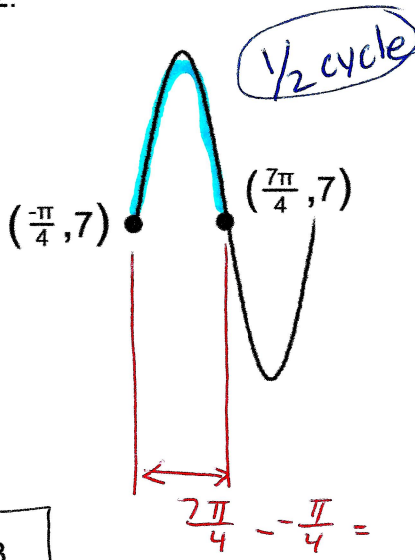
period = $\frac{9\pi}{5}$

$\frac{5\pi}{2} - \frac{\pi}{4} = \frac{10\pi}{4} - \frac{\pi}{4} = \frac{9\pi}{4}$

1 1/4 CYCLES

For 2&3 find just the period of the graph of each Sine function.

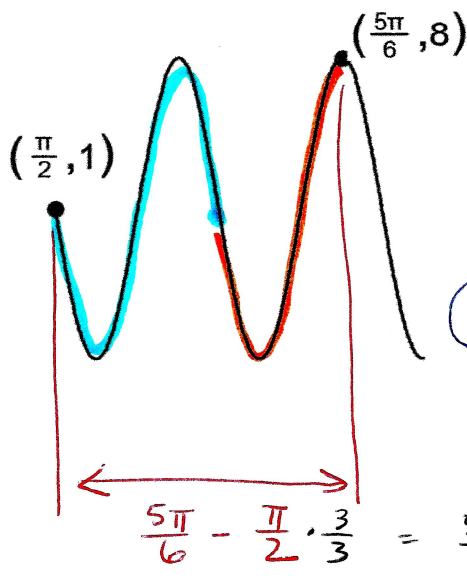
2.



Period: $\frac{\text{TOTAL WIDTH}}{\# \text{ cycles}} = \frac{2\pi}{\frac{1}{2}} = 2\pi \cdot \frac{2}{1} = 4\pi$

period = 4π

3.



Period: $= \frac{\text{TOTAL WIDTH}}{\# \text{ CYCLES}} = \frac{\pi/3}{1\frac{3}{4}} = \frac{\pi}{\frac{7}{4}} = \frac{\pi}{7} \cdot \frac{4}{4} = \frac{4\pi}{7}$

period = $\frac{4\pi}{7}$

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

For 4 and 5 use the given equations to find the Amplitude and Period of each Sine function.

4. $y = -10 \sin 12x$

$a = -10 \rightarrow b = 12$

Amplitude = $|-10| = 10$

Period = $\frac{2\pi}{12} = \frac{\pi}{6}$

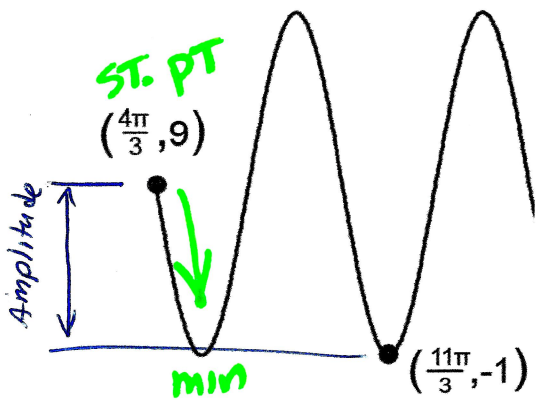
5. $y = 3 \sin \frac{x}{4} = 3 \sin \frac{1}{4}x$
 $a = 3 \rightarrow b = \frac{1}{4}$

Amplitude = $|3| = 3$

Period = $\frac{2\pi}{1/4} = 2\pi \cdot \frac{4}{1} = 8\pi$

For 6 and 7, use the given graph of a Sine function to find the value of a in the equation $y = a \sin x$

6.

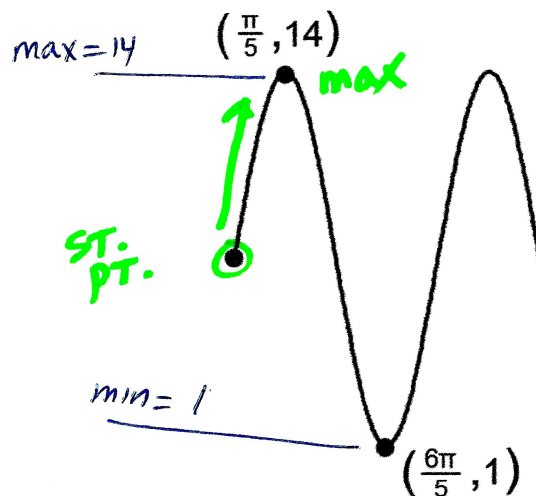


$a = -10$

* Amplitude = $9 - (-1) = 10$

* because graph starts on the midline and goes down this is an upside down Sine graph and a is negative.

7.



$a = 6.5$

* Amplitude = $\frac{\text{max} - \text{min}}{2} = \frac{14 - 1}{2} = \frac{13}{2} = 6.5$

* because graph starts on the midline and goes up it's just like the Parent Function and a is positive.