1. Find a positive and a negative coterminal angle.
Give answer in radians, in terms of π, in reduced form.

$\theta = -\frac{34\pi}{9} + 2\pi$

$-\frac{34\pi}{9} + \frac{18\pi}{9} =$ NEG $-\frac{16\pi}{9}$ POS $\frac{2\pi}{9} = -\frac{16\pi}{9} + \frac{18\pi}{9}$

2. Convert to radians.
Give answer in terms of π, in reduced form.

$\theta = 156° \cdot \frac{\pi}{180^\circ} = \frac{13\pi}{15}$

3. Find the exact value of each.

a) $\sin(-930°)$

$+1080$

$\sin 150 = 1/2$

b) $\tan\frac{35\pi}{6} - \frac{12\pi}{6} - \frac{12\pi}{6} = \tan\frac{11\pi}{6}$

$= \frac{-1/2}{\frac{\sqrt{3}}{2}}$

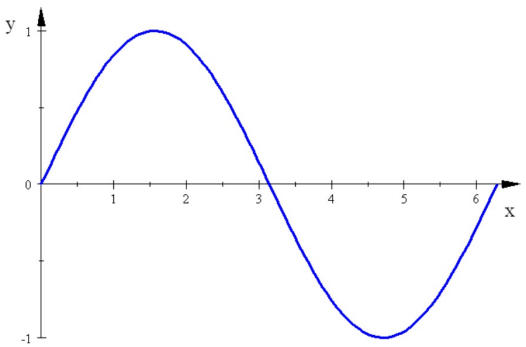
$= \frac{-1}{\sqrt{3}} = -\frac{\sqrt{3}}{3}$

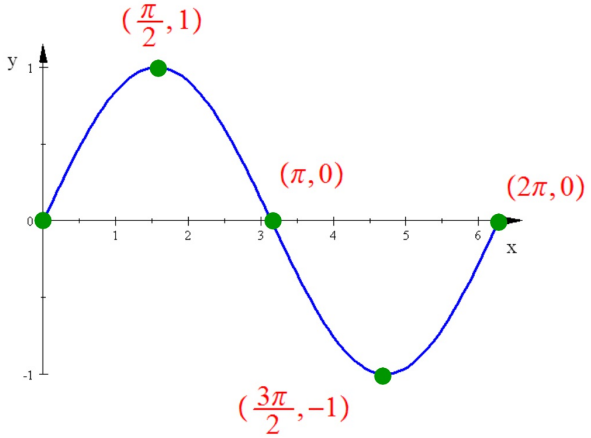
The parent function: y=sinx

Amplitude=
1

Period=
2π

Eq of Midline:
y = 0





$y = a\sin bx$

$|a|$ = Amplitude

Notes

$a<0$ is an x-axis reflection (upside down)

b ⟶ Period = $\frac{2\pi}{b}$

4. Find the Period of each Sine function.

a) $y = 4\sin 6x$

Amp = 4

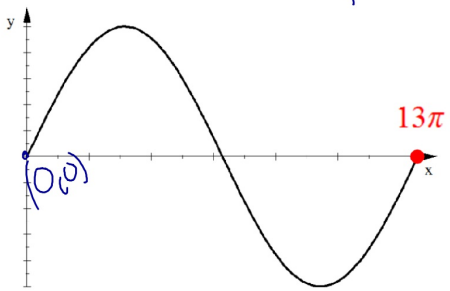
Period = $\frac{2\pi}{6} = \frac{\pi}{3}$

b) $y = -11\sin\frac{x}{7} = \frac{1}{7}x$

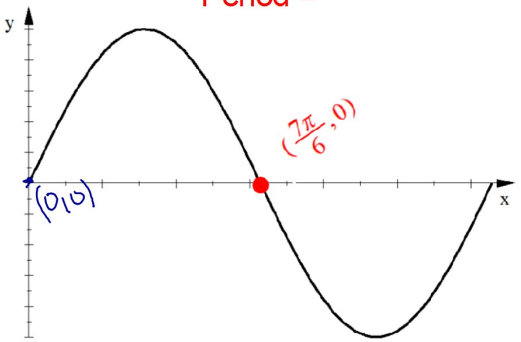
Amp = 11

period = $\frac{2\pi}{\frac{1}{7}} = 14\pi$

5. Period = 13π



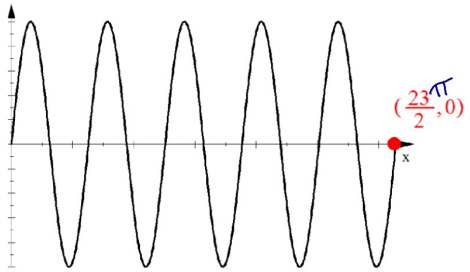
6. Period =



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

$\frac{\frac{\pi}{6}}{\frac{1}{2}} = \frac{\pi}{6} \cdot \frac{2}{1}$

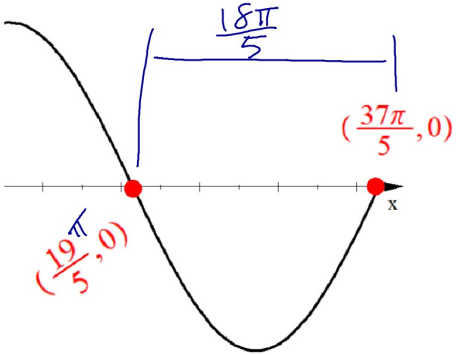
7. Period =



$$\frac{\frac{23\pi}{2}}{5}$$

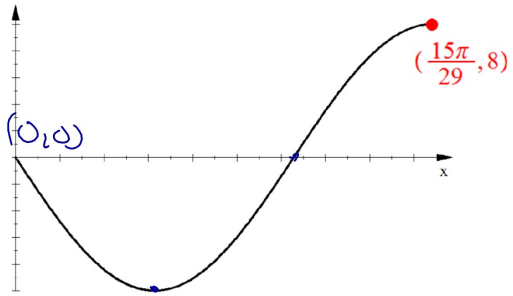
$$\frac{23\pi}{2} \cdot \frac{1}{5} = \boxed{\frac{23\pi}{10}}$$

8. Period =



$$\frac{\frac{18\pi}{5}}{\frac{1}{2}} = \boxed{\frac{36\pi}{5}}$$

9. Period =

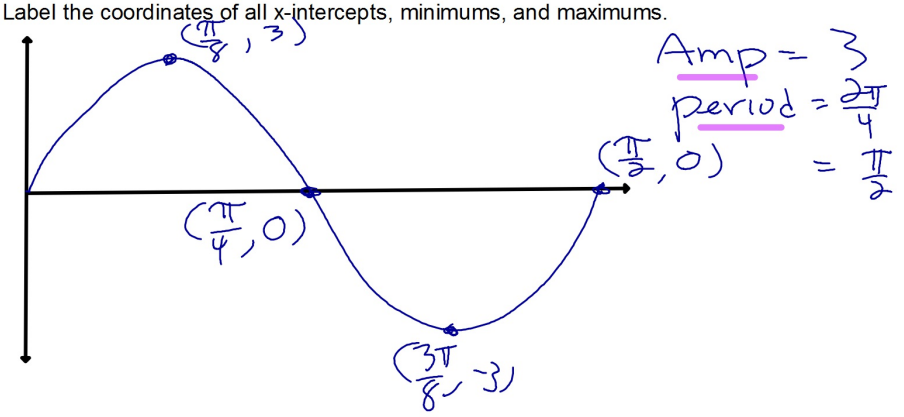


$$\frac{\frac{15\pi}{29}}{\frac{3}{4}}$$

$$\frac{15\pi}{29} \cdot \frac{4}{3} = \boxed{\frac{60\pi}{87}}$$

Sketch one period of the graph of y=3sin4x

Label the coordinates of all x-intercepts, minimums, and maximums.

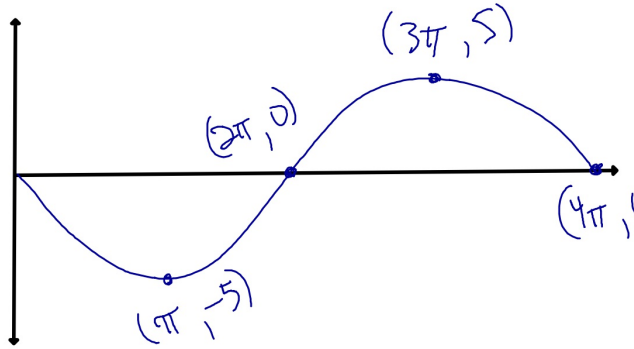


Amp = 3

period = $\frac{2\pi}{4} = \frac{\pi}{2}$

Sketch one period of the graph of $y = -5\sin(\frac{x}{2})$

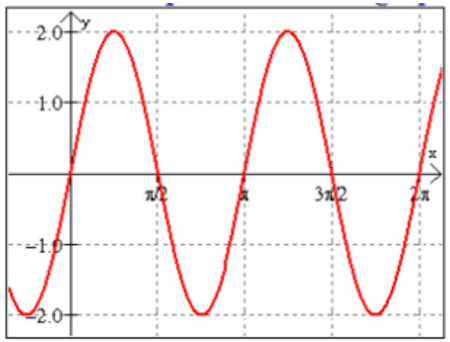
Label the coordinates of all x-intercepts, minimums, and maximums.



Amp = 5

period $= \frac{2\pi}{\frac{1}{2}} = 4\pi$

Write the equation of this sine function. $y = a\sin bx$



Amplitude = 2 $\quad a = 2$

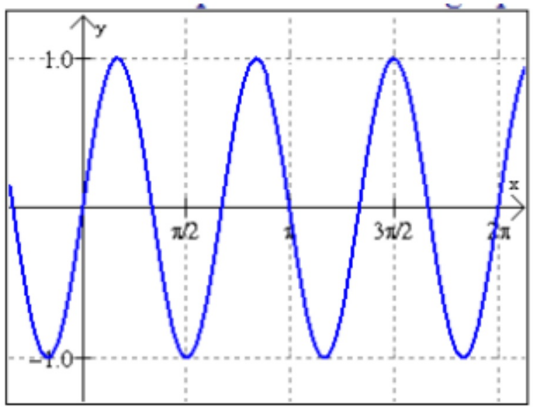
Period = π = $\frac{2\pi}{b} = 2$

$b = \frac{2\pi}{\text{Period}} = \frac{2\pi}{\pi} = 2$

$y = 2\sin 2x$

Another way to find b. b= # of periods in 2π

Write the equation of this sine function. $y = a\sin bx$



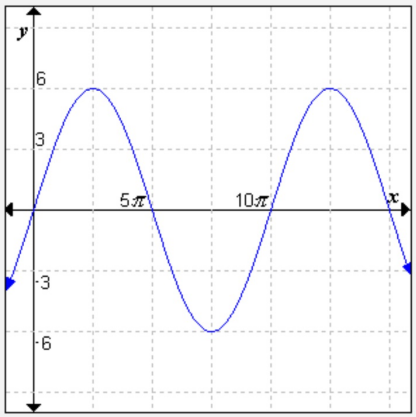
$a = 1$

$b = \frac{2\pi}{\frac{2\pi}{3}} = 3$

period $= \frac{2\pi}{3}$

$y = \sin 3x$

Write the equation of this sine function. $y = a\sin bx$



Amp = 6

$a = 6$

period $= 10\pi$

$\frac{15\pi}{\frac{3}{2}} = 15\pi \cdot \frac{2}{3}$

$b = \frac{2\pi}{10\pi} = \frac{1}{5}$

$y = 6\sin\frac{x}{5}$