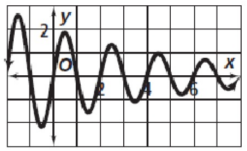
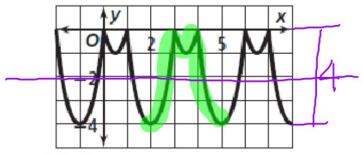
For 1-2, state if each function is periodic. If yes, state the Period, Amplitude, and equation of the Midline.

1.



NO

2.



Yes

Period = 3

Amp = 2

mid = $y = -2$

3. Find both a positive and a negative coterminal angle for each given angle

a) $\theta = \frac{38\pi}{9}$ $\pm 2\pi$

$\frac{38\pi}{9} - \frac{18\pi}{9}$

Pos $\frac{20\pi}{9}$, $\frac{56\pi}{9}$, $\frac{2\pi}{9}$ . . .

Neg $-\frac{16\pi}{9}$

b) $-940°$ $\pm 360°$

$-580°$, $-220°$, $140°$

Neg Pos

There are many answers, some possibilities are given.

5. Convert to ~~degrees~~ radians.

$840° \cdot \frac{\pi}{180°}$

$\frac{840\pi}{180}$

$\frac{42\pi}{9}$ $\frac{14\pi}{3}$

4. Convert to ~~radians~~ degrees.

$-\frac{11\pi}{36} \cdot \frac{180°}{\pi}$ $-55°$

6. Give the exact value of each.

a) $\cos(-930°)$ $-\frac{\sqrt{3}}{2}$

$\cos 150°$

b) $\tan\frac{17\pi}{4}$ $+1$

$\frac{17\pi}{4} - \frac{8\pi}{4}$

c) $\sin(-\frac{13\pi}{2}) = -1$

$-\frac{13\pi}{2} + \frac{4\pi}{2} + \frac{4\pi}{2} + \frac{4\pi}{2} + \frac{4\pi}{2} = \frac{3\pi}{2}$

d) $\tan 1620°$

-1080

$\tan 540$

-360

$\tan 180$

$\frac{9\pi}{4} - \frac{8\pi}{4}$

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

$\tan 180 = 0$

e) $\cos\frac{19\pi}{3}$ $\frac{6\pi}{3} - \frac{6\pi}{3} - \frac{6\pi}{3}$

$\cos \pi/3 = +\frac{1}{2}$

$\frac{1}{2}$

f) $\sin 765°$ $+\frac{\sqrt{2}}{2}$

-360

405

$-360/45$

7. In which quadrant or on what axis does the terminal side of each angle lie?

a) $3460°$ -1080 $2380-1080 = 1300-1080$ $=220°$ III

b) $-\frac{46\pi}{7} + 10\pi/7$ III

c) $\frac{71\pi}{11} - \frac{22\pi}{11}$ $\frac{5\pi}{11}$ I

8. State the period and amplitude for this sine function.

$y = -14\sin\frac{8x}{9}$

Amp = 14

period $= \frac{2\pi}{\frac{8}{9}} = 2\pi \cdot \frac{9}{8} = \frac{9\pi}{4}$

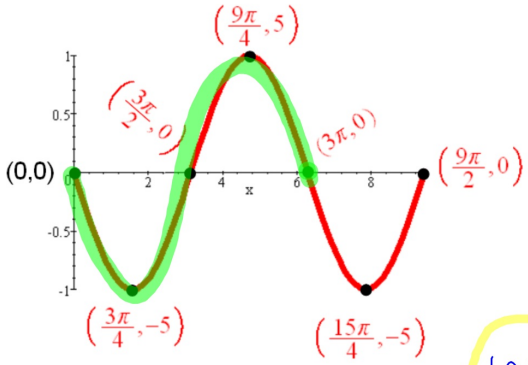
9. Graph one period of this sine function.

$y = -5.5\sin 7x$

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

(0,0) $\left(\frac{\pi}{14}, 5.5\right)$ $\left(\frac{2\pi}{7}, 0\right)$ $\left(\frac{\pi}{7}, 0\right)$ $\left(\frac{\pi}{14}, -5.5\right)$

10. Write the equation of the given sine function.



Period $= 3\pi$

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

Amp $= 5$

$y = -5\sin\frac{2}{3}x$ or $\frac{2x}{3}$