

Name: Key

Date: _____ Per: _____

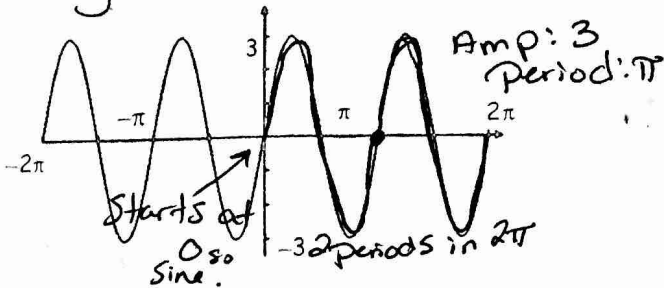
Amplitude and Period for Sine and Cosine Functions Worksheet

Determine the amplitude and period of each function, **Range**

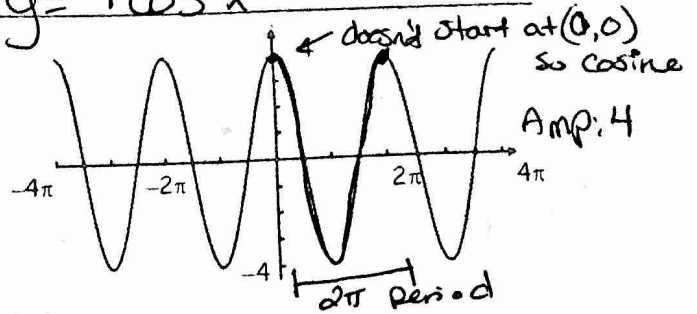
1. $y = \sin 4x$ Amp: 1 Period: $\frac{2\pi}{4} = \frac{\pi}{2}$ Range: $[-1, 1]$
2. $y = \cos 5x$ Amp: 1 Period: $\frac{2\pi}{5}$ Range: $[-1, 1]$
3. $y = \sin x$ Amp: 1 Period: 2π Range: $[-1, 1]$
4. $y = 4 \cos x$ Amp: 4 Period: 2π Range: $[-4, 4]$
5. $y = -2 \sin x$ Amp: 2 Period: 2π Range: $[-2, 2]$
6. $y = 2 \sin(-4x)$ Amp: 2 Period: $\frac{\pi}{2}$ Range: $[-2, 2]$
7. $y = 3 \sin \frac{2}{3}x$ Amp: 3 Period: $\frac{2\pi}{\frac{2}{3}} = 3\pi$ Range: $[-3, 3]$
8. $y = -4 \cos 5x$ Amp: 4 Period: $\frac{2\pi}{5}$ Range: $[-4, 4]$
9. $y = 3 \cos(-2x)$ Amp: 3 Period: π Range: $[-3, 3]$

Give the amplitude and period of each function graphed below. Then write the equation of each graph.

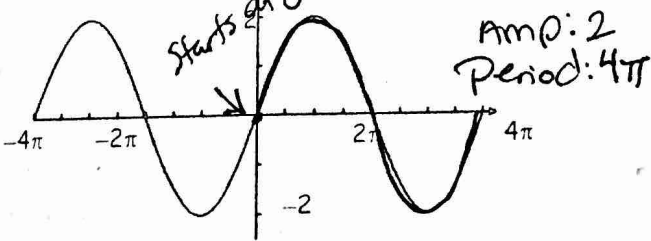
10. $y = 3 \sin(2x)$



11. $y = 4 \cos x$

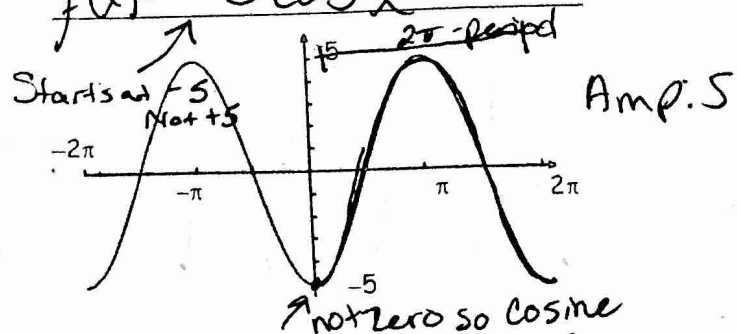


12. $y = 2 \sin\left(\frac{x}{2}\right)$



13.

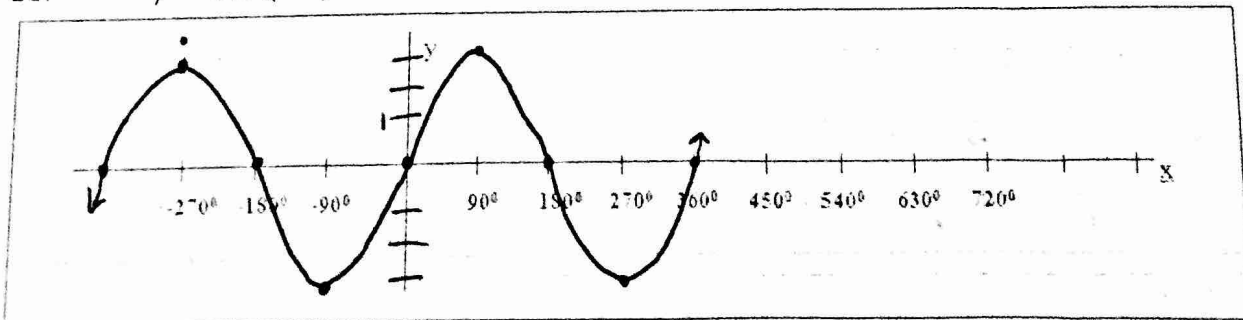
$f(x) = -5 \cos x$



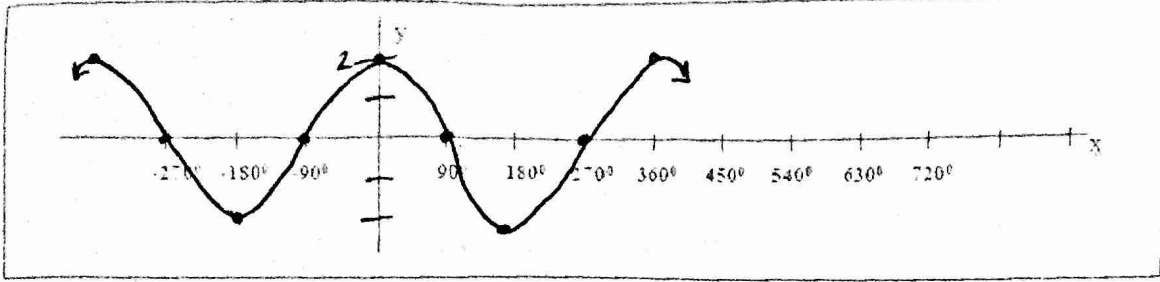
Give the amplitude and period of each function. Then graph of the function over the interval $-2\pi \leq x \leq 2\pi$. Graphs provided. BE as accurate with your graphing as possible. Make sure your zero crossing are correct.

14. $y = 3 \sin x$ Amp: 3 Period: 2π ie 360°
15. $y = 2 \cos x$
16. $y = 3 \sin 2x$
17. $y = 5 \cos 2x$
18. $y = 3 \cos \frac{1}{2}x$
19. $y = -\cos(-3x)$

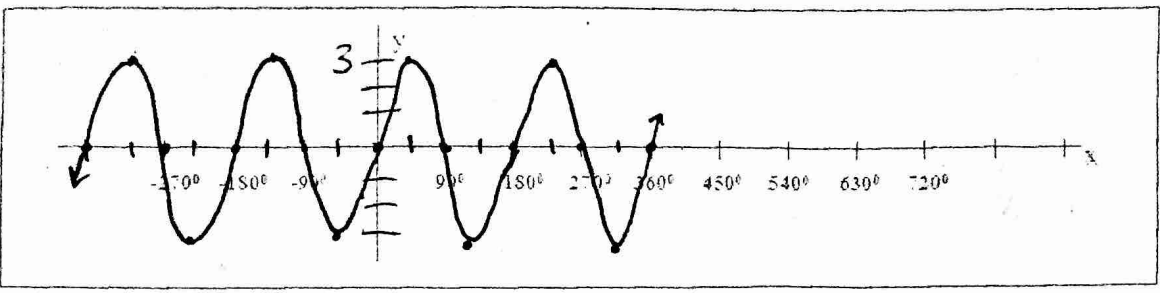
20. $y = -2 \sin(-2x)$



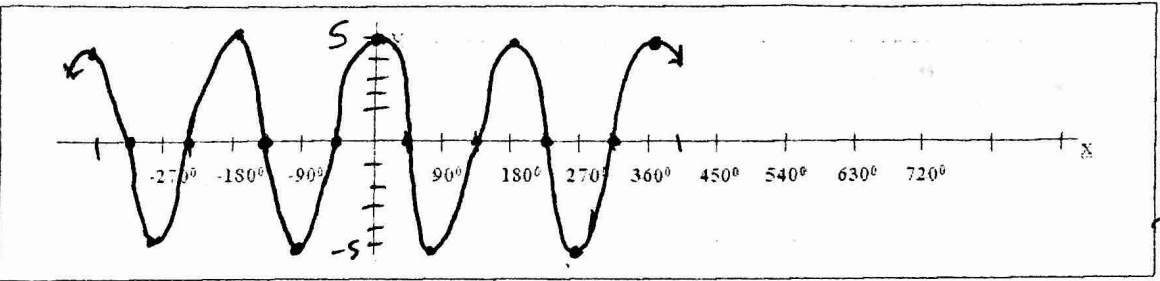
14.
 $y = 3 \sin x$



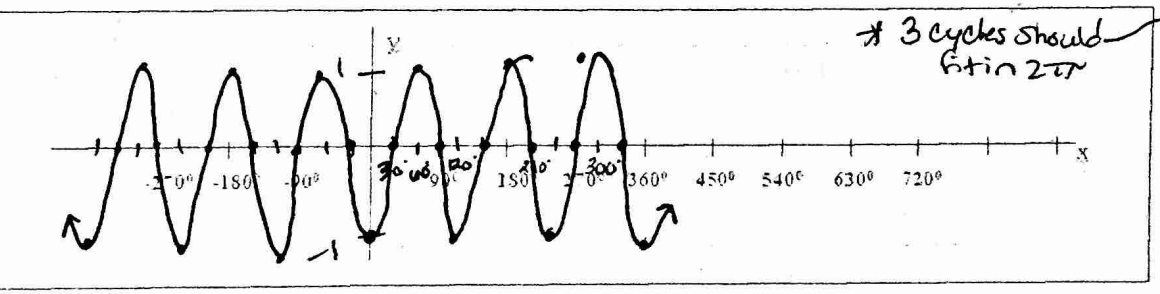
15
 $y = 2 \cos x$
 Amp 2
 Period 2π



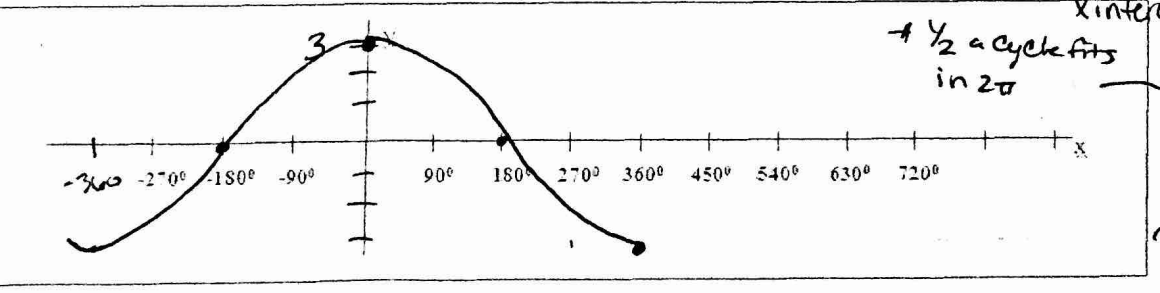
16
 $y = 3 \sin(2x)$
 Amp 3
 Period π



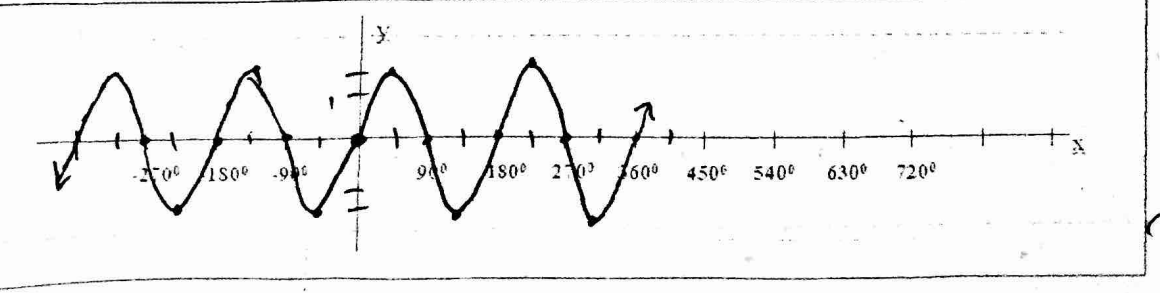
17
 $y = 5 \cos 2x$
 Amp: 5
 Period: π



18. *doesn't change due to even*
 $y = -\cos(3x)$
 Flips it
 Amp: 1
 Period: $\frac{2\pi}{3}$



19. *x intercepts: $\frac{2\pi}{3} \div 4 = \frac{2\pi}{3} \cdot \frac{1}{4} = \frac{\pi}{6}$*
 $y = 3 \cos \frac{1}{2} x$
 Amp: 3
 Period: $\frac{2\pi}{1/2} = 4\pi$



20. *flips keeps the same*
 $y = -2 \sin(-2x)$
 Amp: 2
 Period: π