

Amplitude and Period for Sine and Cosine Functions Worksheet

Determine the amplitude and period of each function.

1. $y = \sin 4x$

$A = 1$
Pd: $\frac{\pi}{2}$

4. $y = 4 \cos x$

$A = 4$
Pd: 2π

7. $y = 3 \sin \frac{2}{3}x$

$A = 3$
Pd: 3π

2. $y = \cos 5x$

$A = 1$
Pd: $\frac{2\pi}{5}$

5. $y = -2 \sin x$

$A = 2$
Pd: 2π

8. $y = -4 \cos 5x$

$A = 4$
Pd: $\frac{2\pi}{5}$

3. $y = \sin x$

$A = 1$
Pd: 2π

6. $y = 2 \sin(4x)$

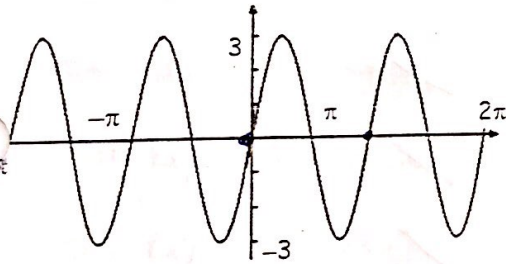
$A = 2$
 $\frac{\pi}{2} = \text{Pd}$

9. $y = 3 \cos(2x)$

$A = 3$
 $\frac{\pi}{2} = \text{Pd}$

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

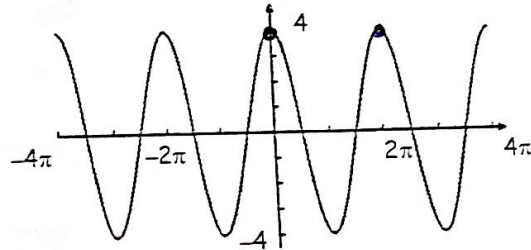
10.



$A = 3$
Pd: π

$y = 3 \sin(2\theta)$

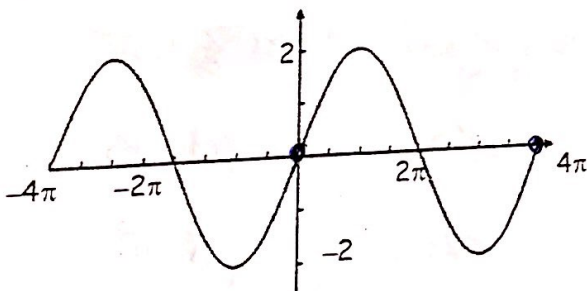
11.



$A = 4$
Pd: 2π

$y = 4 \cos(x)$

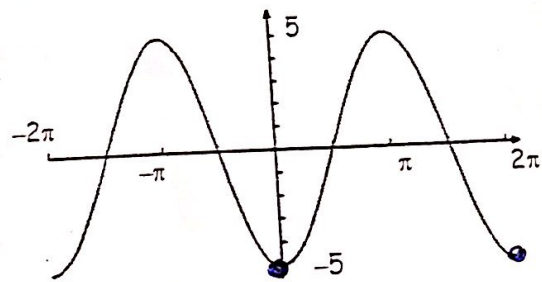
12.



$A = 2$
Pd: 4π

$y = 2 \sin(\frac{1}{2}x)$

13.



Amp: 5

Pd: 2π

$y = -5 \cos x$

SINE CURVE EQUATION

Match the sine curve equations on the right to their characteristics on the left. Place the letter of the matching equation on the blank before its characteristics.

	Amplitude	Period	Displacement	Sine curve equation $y =$
<u>e</u> 1.	1	2π	$\frac{\pi}{4}$ units left	a. $\sin 3\left(x - \frac{\pi}{6}\right)$ pd $2\pi/3$
<u>O</u> 2.	2	π	$\frac{\pi}{2}$ units right	b. $1.5 \sin 4\left(x - \frac{\pi}{6}\right)$ pd $\pi/2$
<u>B</u> 3.	1.5	$\frac{\pi}{2}$	$\frac{\pi}{6}$ units right	c. $2 \sin 2\left(x - \frac{\pi}{4}\right)$ pd π
<u>i</u> 4.	1.5	2π	$\frac{\pi}{6}$ units left	d. $\sin 3(x + \pi)$ pd $2\pi/3$
<u>D</u> 5.	1	$\frac{2\pi}{3}$	π units left	e. $\sin\left(x + \frac{\pi}{4}\right)$ pd 2π
<u>J</u> 6.	2	4π	$\frac{\pi}{3}$ units right	f. $1.5 \sin\left(x - \frac{\pi}{6}\right)$ pd 2π
<u>K</u> 7.	1	$\frac{3\pi}{4}$	$\frac{\pi}{2}$ units right	g. $\sin \frac{2}{3}\left(x + \frac{\pi}{2}\right)$ pd 3π
<u>L</u> 8.	1	5π	$\frac{\pi}{4}$ units left	h. $1.5 \sin 2(x - \pi)$ pd π
<u>H</u> 9.	1.5	π	π units right	i. $1.5 \sin\left(x + \frac{\pi}{6}\right)$ pd 2π
<u>M</u> 10.	2	$\frac{\pi}{2}$	$\frac{2\pi}{3}$ units left	j. $2 \sin \frac{1}{2}\left(x - \frac{\pi}{3}\right)$ pd 4π
<u>G</u> 11.	1	3π	$\frac{\pi}{2}$ units left	k. $\sin \frac{8}{3}\left(x - \frac{\pi}{2}\right)$ pd $\frac{3\pi}{4}$
<u>N</u> 12.	2	π	$\frac{\pi}{6}$ units right	l. $\sin 4\left(x + \frac{\pi}{4}\right)$ pd 5π
<u>q</u> 13.	1.5	4π	2π units left	m. $2 \sin 4\left(x + \frac{2\pi}{3}\right)$ pd $\pi/2$
<u>P</u> 14.	1.5	10π	π units right	n. $2 \sin 2\left(x - \frac{\pi}{6}\right)$ pd π
				o. $2 \sin 2\left(x - \frac{\pi}{2}\right)$ pd π
				p. $1.5 \sin 2(x - \pi)$ pd 10π
				q. $1.5 \sin \frac{1}{2}(x + 2\pi)$ pd 4π