Give the amplitude, period, and an equation for each graph. $y = A\sin Bx$ or $y = A\cos Bx$

1) amp = 3. not reflected $\Rightarrow A = 3$

per = π

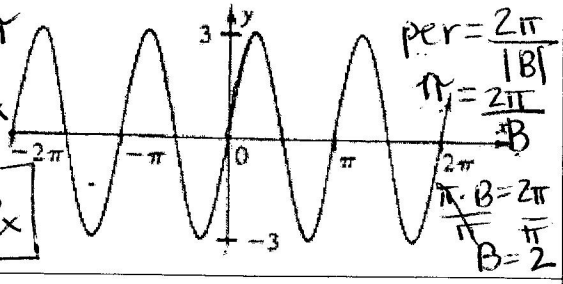
$y = A\sin Bx$

per = $\frac{2\pi}{|B|}$

$\pi = \frac{2\pi}{B}$

$\pi \cdot B = 2\pi$

$\frac{\pi}{\pi} \quad \frac{\pi}{B} = 2$

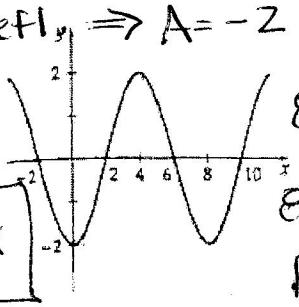


$y = 3\sin 2x$

2) amp = 2 refl $\Rightarrow A = -2$

per = 8

$y = A\cos Bx$



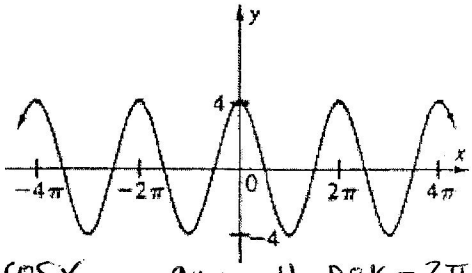
$8 = \frac{2\pi}{B}$

$8B = 2\pi$

$B = \frac{2\pi}{8} = \frac{\pi}{4}$

$y = -2\cos\frac{\pi}{4}x$

3)



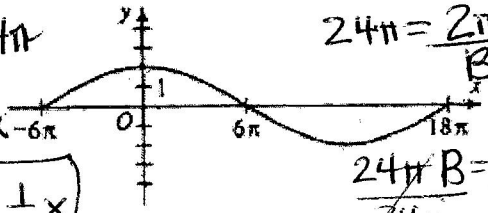
$y = 4\cos x$ amp = 4 per = 2π

4) amp = 2 not reflected $\Rightarrow A = 2$

per = 24π

$24\pi = \frac{2\pi}{B}$

$y = A\cos Bx$

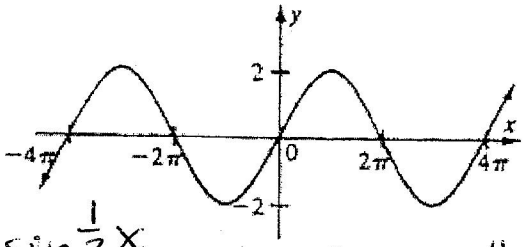


$y = 2\cos\frac{1}{12}x$

$\frac{24\pi B}{24\pi} = \frac{2\pi}{24\pi}$

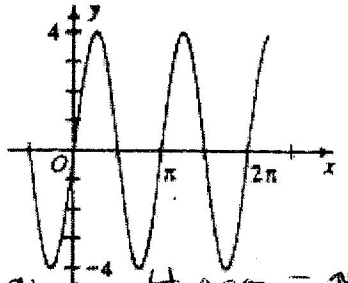
$B = \frac{1}{12}$

5)



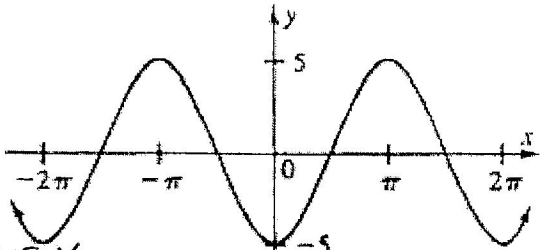
$y = 2\sin\frac{1}{2}x$ amp = 2 per = 4π

6)



$y = 4\sin 2x$ amp = 4 per = π

7)



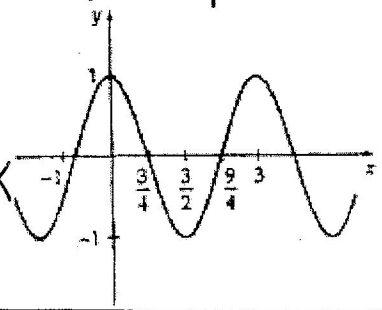
$y = -5\cos x$ amp = 5 per = 2π

8)

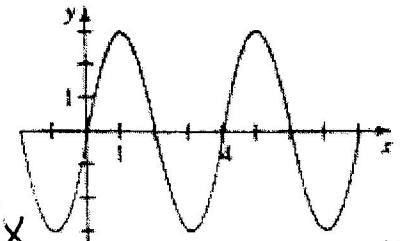
amp = 1

per = 3

$y = 1\cos\frac{2\pi}{3}x$



9)



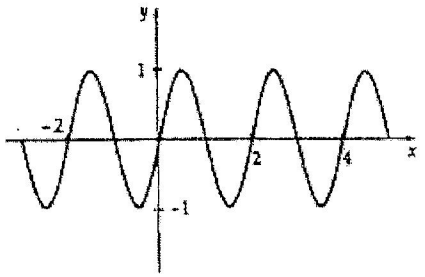
$y = 3\sin\frac{\pi}{2}x$ amp = 3 per = 4

10)

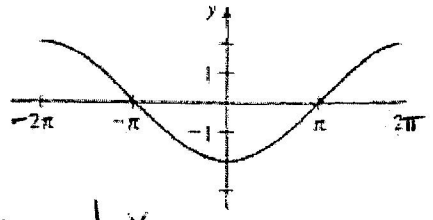
amp = 1

per = 2

$y = 1\sin\pi x$

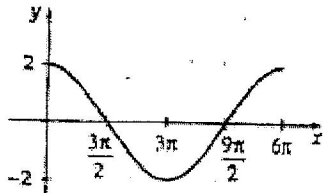


11)



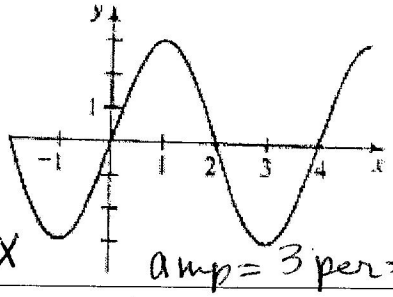
$y = -2\cos\frac{1}{2}x$ amp = 2 per = 4π

12)



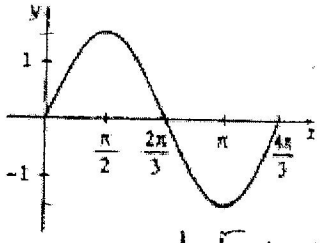
$y = 2\cos\frac{1}{3}x$ amp = 2 per = 6π

13)



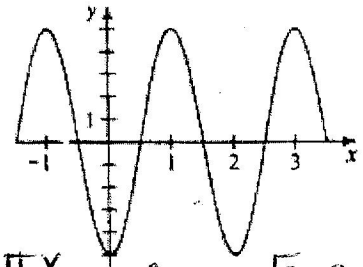
$y = 3\sin\frac{\pi}{2}x$ amp = 3 per = 4

14)



$y = 1.5\sin\frac{3}{2}x$ amp = 1.5 per = $\frac{4\pi}{3}$

15)



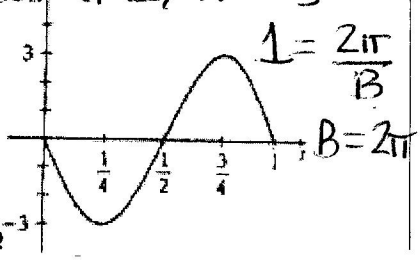
$y = -5\cos\pi x$ amp = 5 per = 2

16) amp = 3 reflected $\Rightarrow A = -3$

per = 1

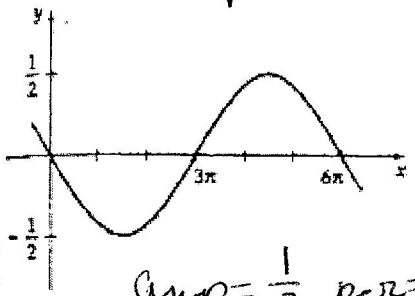
$y = A\sin Bx$

$\boxed{y = -3\sin 2\pi x}$



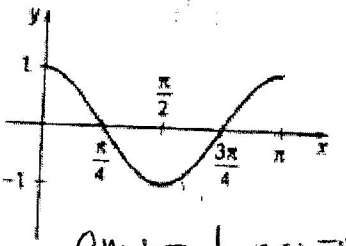
$1 = \frac{2\pi}{B}$ $B = 2\pi$

17)



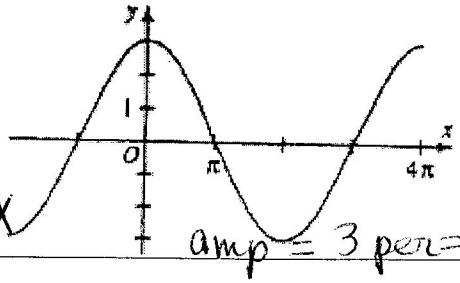
$y = -\frac{1}{2}\sin\frac{1}{3}x$ amp = $\frac{1}{2}$ per = 6π

18)



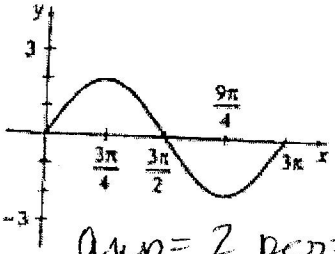
$y = \cos 2x$ amp = 1 per = π

19)



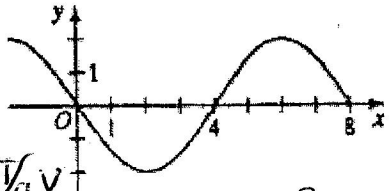
$y = 3\cos\frac{1}{2}x$ amp = 3 per = 4π

20)



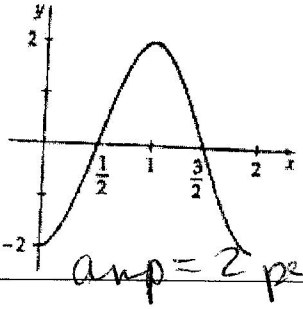
$y = 2\sin\frac{2}{3}x$ amp = 2 per = 3π

21)



$y = -2\sin\pi/4x$ amp = 2 per = 8

22)



$y = -2\cos\pi x$ amp = 2 per = 2