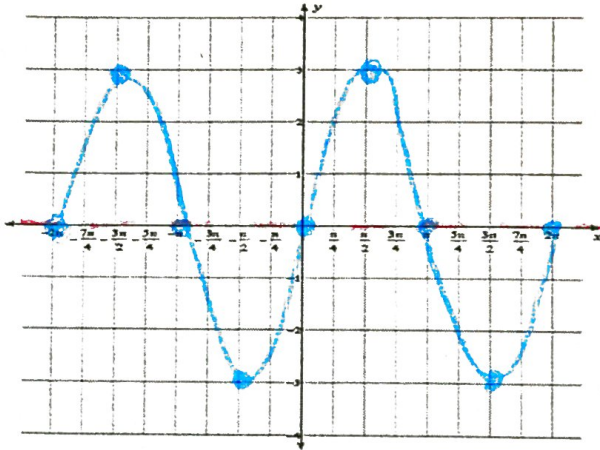


Give the amplitude and period of each function. Then sketch the graph of the function over the interval $-2\pi \leq x \leq 2\pi$ using the key points for each function.

1. $y = 3 \sin x$

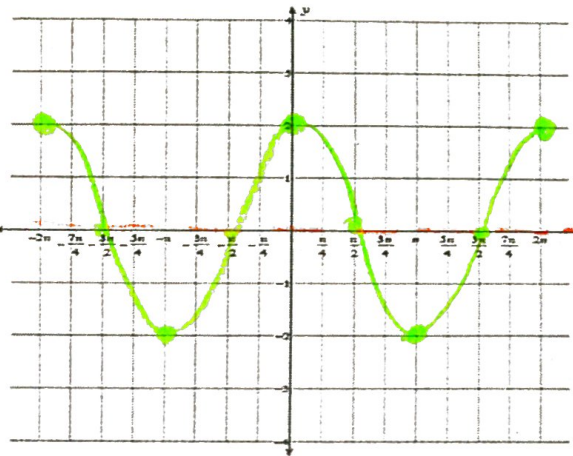


midline
 $y=0$

Amplitude = 3

Period = 2π

2. $y = 2 \cos x$

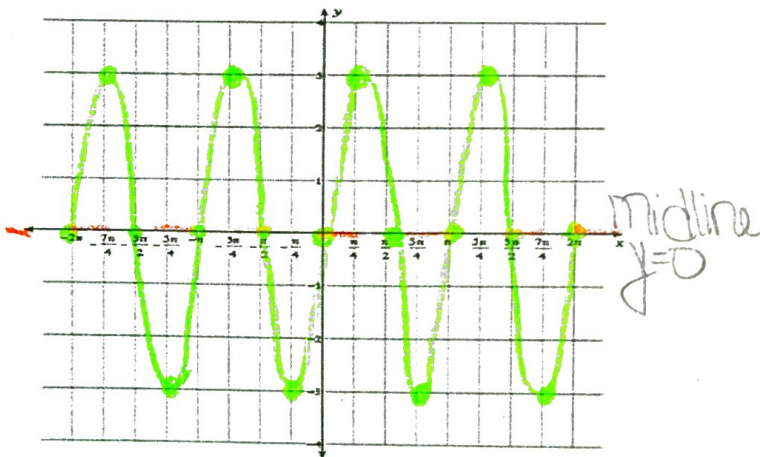


midline
 $y=0$

Amplitude = 2

Period = 2π

3. $y = 3 \sin 2x$

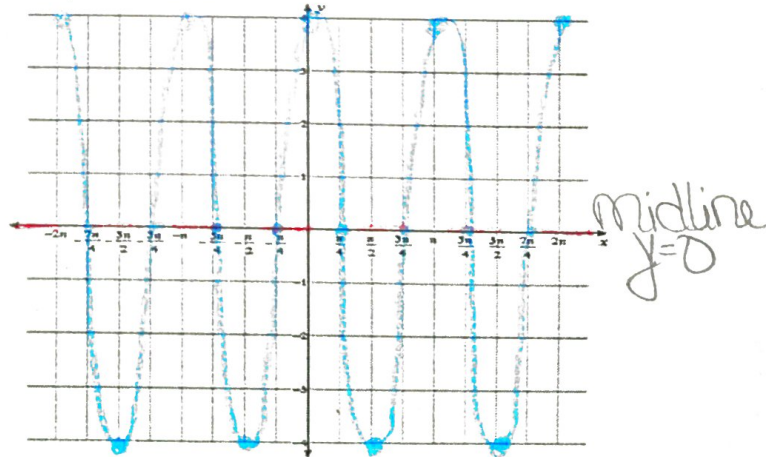


midline
 $y=0$

Amplitude = 3

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

4. $y = 4 \cos 2x$

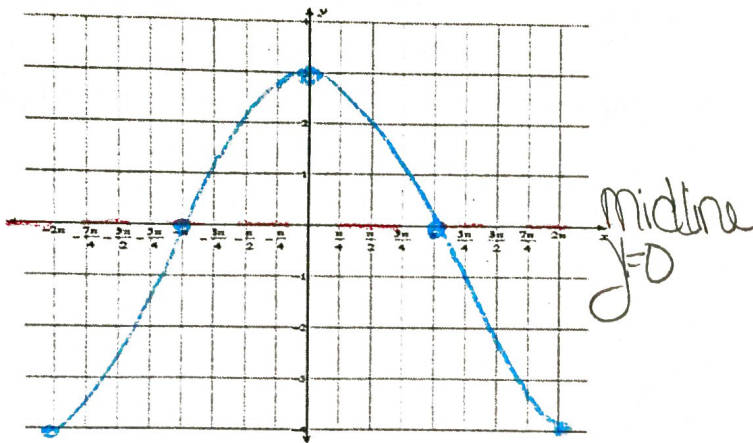


midline
 $y=0$

Amplitude = 4

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

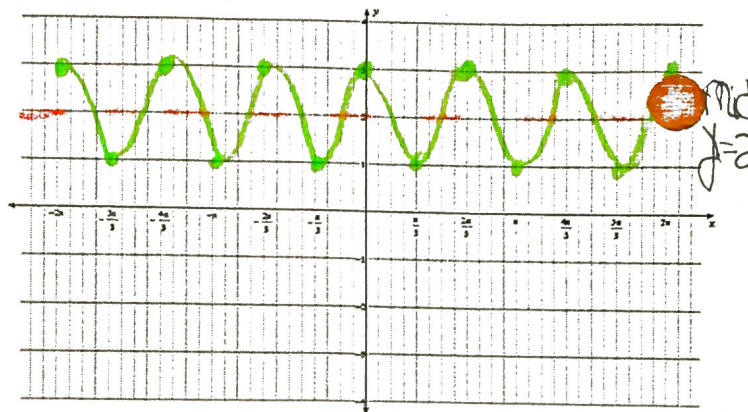
5. $y = 3 \cos \frac{1}{2}x$



Amplitude = 3

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

6. $y = \cos(3x) + 2$

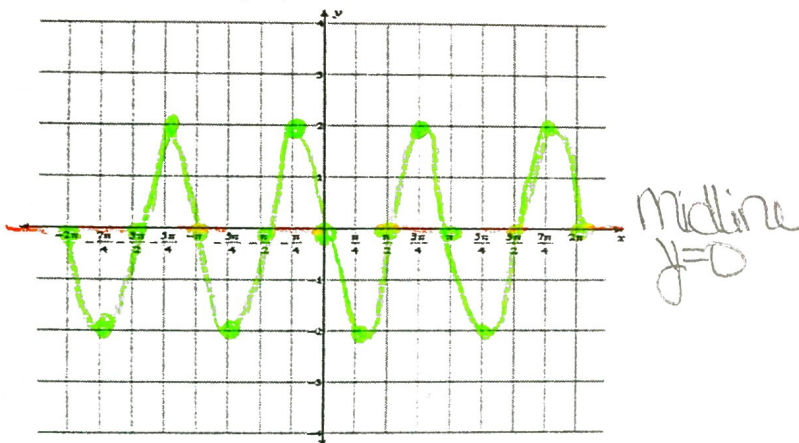


Amplitude = 1

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

Midline = $y=2$

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



Amplitude = 2

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

8. Write an equation for a sine function that has an amplitude of 4 and a period of π .

$f(x) = 4 \sin(2x)$

9. Write an equation for a cosine function that has an amplitude of $\frac{3}{5}$ and a period of $\frac{3}{2}\pi$.

$f(x) = \frac{3}{5} \cos\left(\frac{4}{3}x\right)$

10. Write an equation for a sine function that has an amplitude of 5 and a period of 3π .

$f(x) = 5 \sin\left(\frac{2}{3}x\right)$

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

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