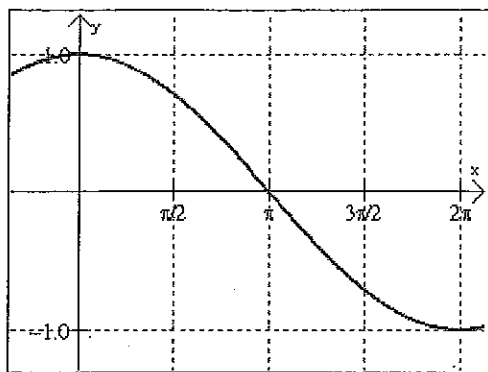


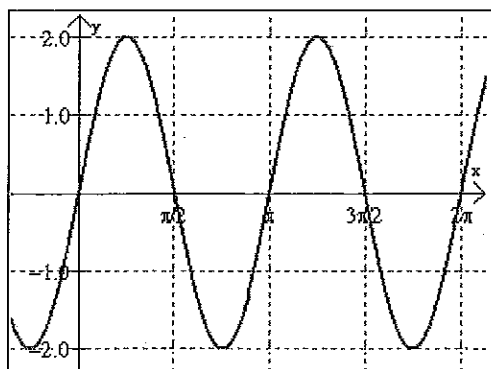
1. Determine an equation for this graph:



Choose:

- $y = \cos(2x)$
- $y = 2 \cos(x)$
- $y = \frac{1}{2} \cos(x)$
- $y = \cos\left(\frac{1}{2}x\right)$

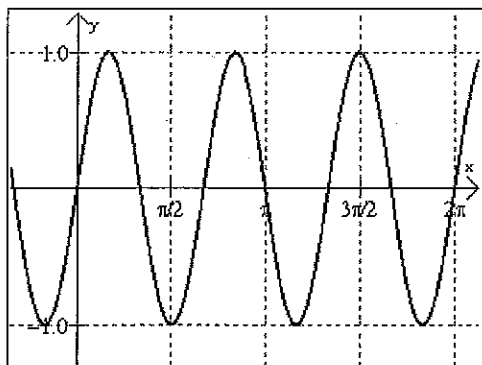
2. Determine an equation for this graph:



Choose:

- $y = 2 \sin\left(\frac{1}{2}x\right)$
- $y = 2 \sin(2x)$
- $y = 2 \cos\left(\frac{1}{2}x\right)$
- $y = 2 \cos(2x)$

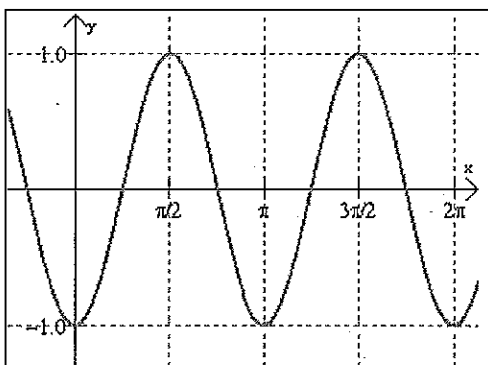
3. Determine an equation for this graph:



Choose:

- $y = 3 \sin(x)$
- $y = 3 \sin(3x)$
- $y = \sin(3x)$
- $y = \sin\left(\frac{1}{3}x\right)$

4. Determine an equation for this graph:

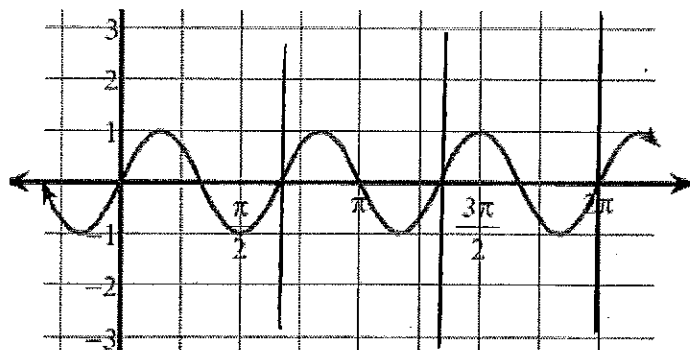


Choose:

- $y = -\cos(2x)$
- $y = -\cos\left(\frac{1}{2}x\right)$
- $y = -\sin(2x)$
- $y = -2 \cos\left(\frac{1}{2}x\right)$

Write the equation for the given graphs. (There is no horizontal phase shift)

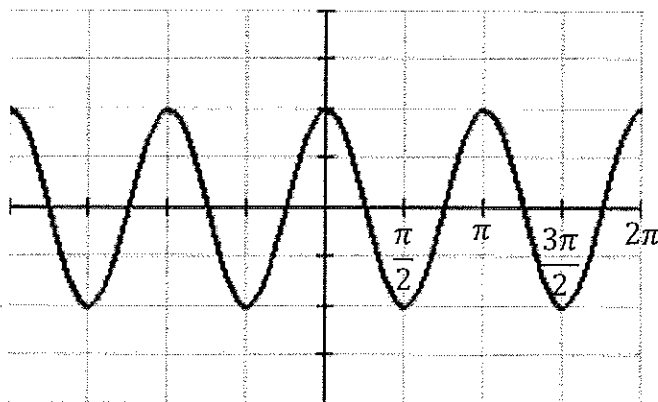
5.



3 cycles in 2π

$$y = \sin 3x$$

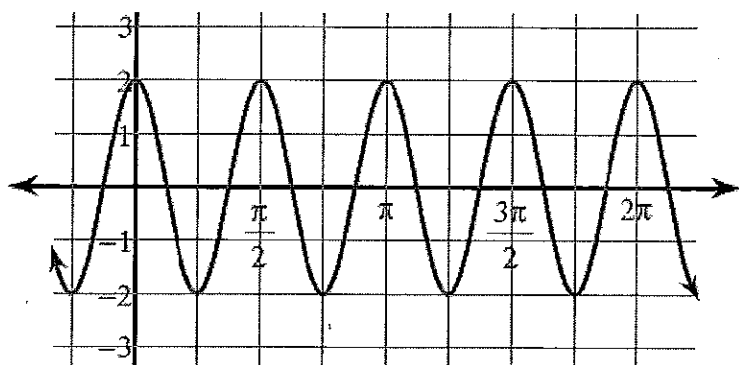
6.



2 cycles in 2π

$$y = 2 \cos 2x$$

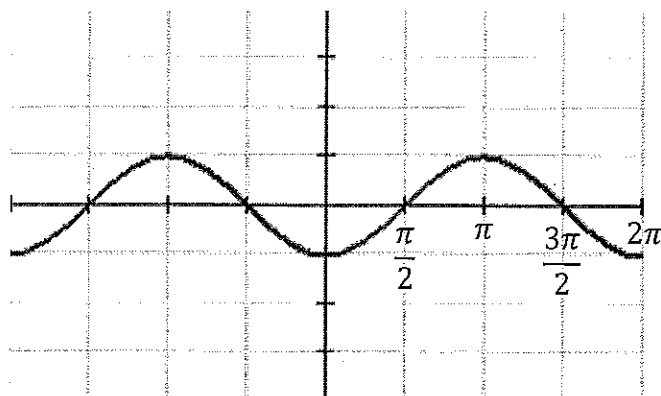
7.



4 cycles in 2π

$$y = 2 \cos 4x$$

8.

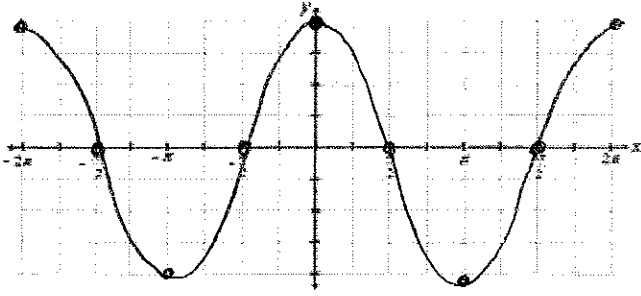


$$y = -\cos x$$

Graph each function using radians.

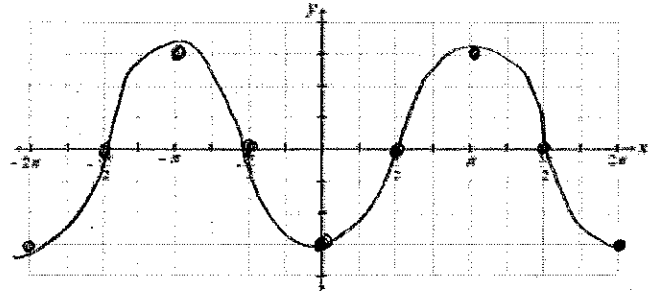
15. $y = 4\cos\theta$

Amp: 4
 period: 2π
 count $\pi/2$



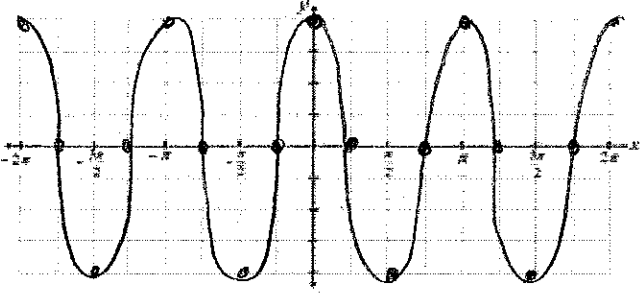
16. $y = -3\cos\theta$

Amp: 3
 period: 2π
 count $\pi/2$



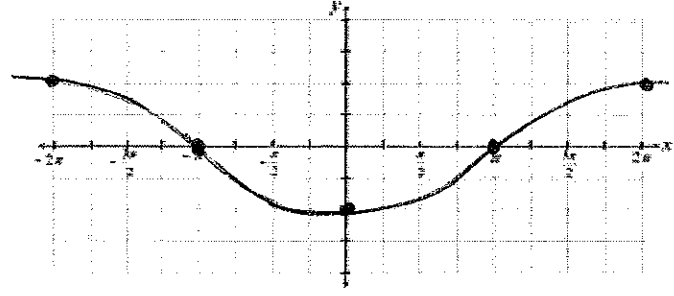
19. $y = 4\cos 2x$

Amp: 4
 period $\frac{2\pi}{2} = \pi$
 count: $\pi/4$



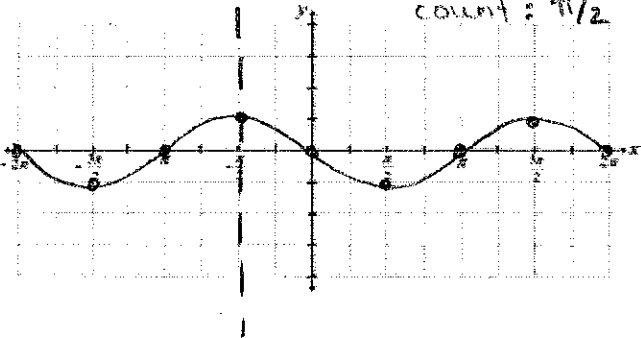
20. $y = -2\cos\frac{\theta}{2}$

Amp: 2
 period: $\frac{2\pi}{\frac{1}{2}} = 4\pi$
 count: π



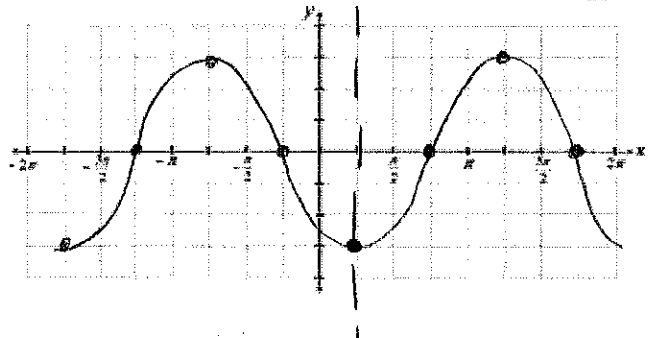
21. $y = \cos\left(\theta + \frac{\pi}{2}\right)$

Left $-\frac{\pi}{2}$
 Amp: 1
 period: 2π
 count: $\pi/2$

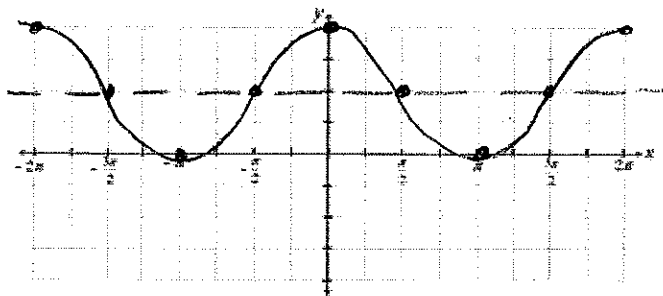


22. $y = -3\cos\left(x - \frac{\pi}{4}\right)$

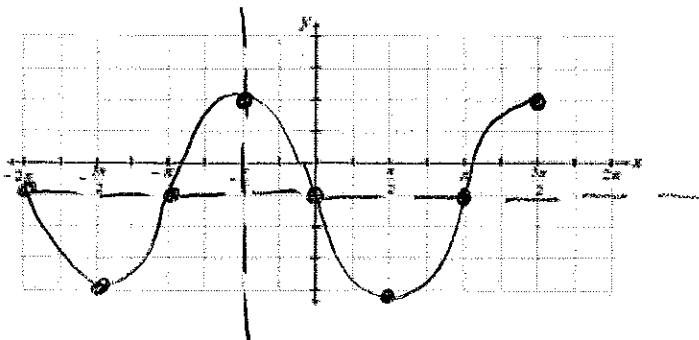
reflects
 right
 Amp: 3
 period: 2π
 count: $\frac{\pi}{2}$



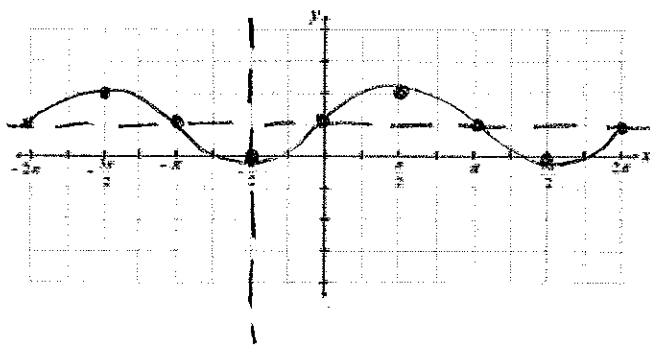
23. $y = 2\cos x + 2$ Amp 2
 period 2π
 count $\pi/2$



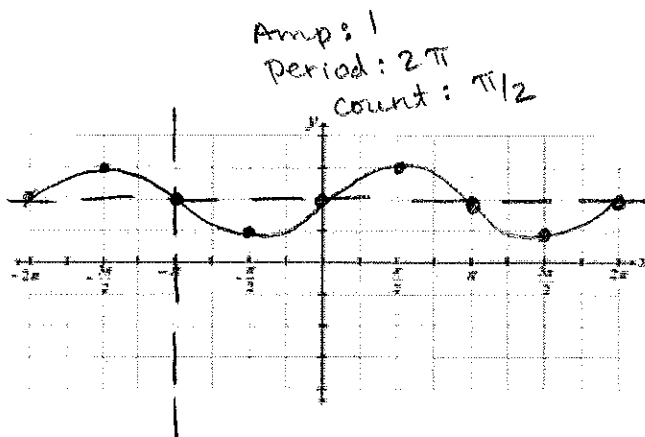
24. $y = 3\cos\left(\theta + \frac{\pi}{2}\right) - 1$ ← left
 Amp: 3
 period: 2π
 count $\pi/2$



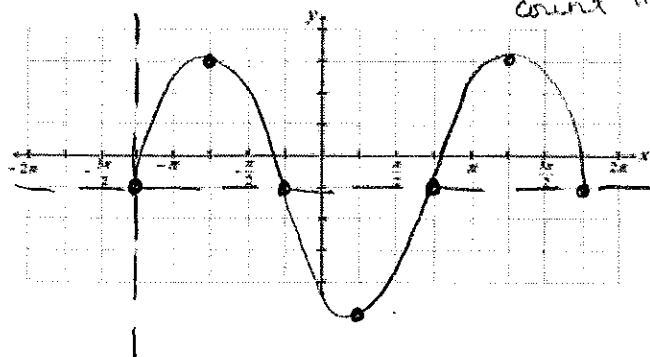
25. $y = -\cos\left(\theta + \frac{\pi}{2}\right) + 1$ ← reflects
 ← left
 ← up



26. $y = -\sin(x + \pi) + 2$ ← reflects
 ← left
 ← up



27. $y = 4\underline{\sin}\left(x + \frac{5\pi}{4}\right) - 1$ ← down
 left



28. $y = 3\cos\left(x + \frac{3\pi}{4}\right) - 2$ ← left
 ← down

