

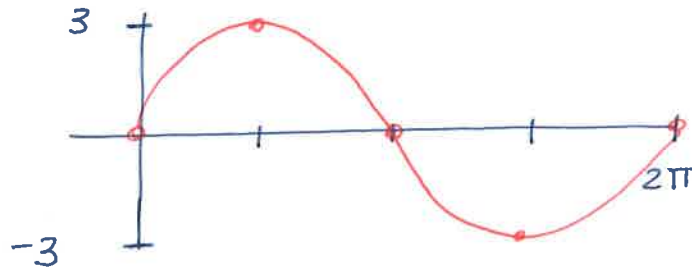
1. Graph  $y = 3 \sin x$

Amplitude: 3

Vertical Shift: 0

Period:  $2\pi$

Phase Shift: 0



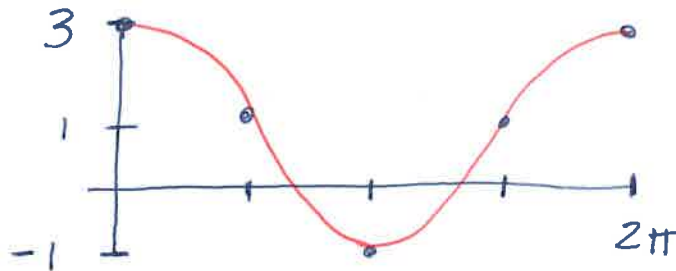
2. Graph  $y = 2 \cos x + 1$

Amplitude: 2

Vertical Shift: 1

Period:  $2\pi$

Phase Shift: 0



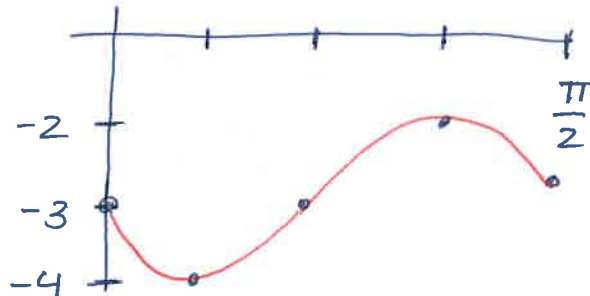
3. Graph  $y = -\sin 4x - 3$

Amplitude: 1

Vertical Shift: -3

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

Phase Shift: 0



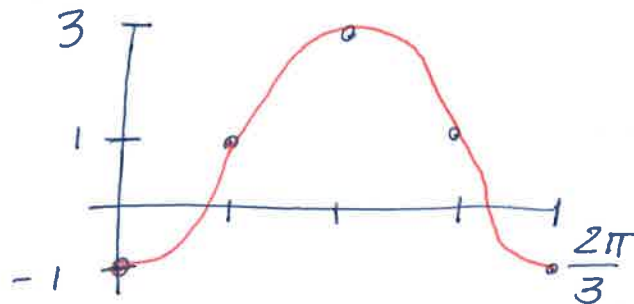
4. Graph  $y = -2 \cos 3x + 1$

Amplitude: 2

Vertical Shift: 1

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

Phase Shift: 0



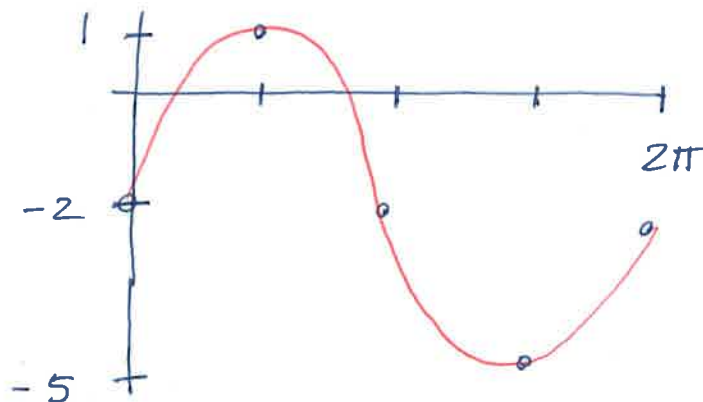
5. Graph  $y = 3 \sin x - 2$

Amplitude: 3

Vertical Shift: -2

Period:  $2\pi$

Phase Shift: 0



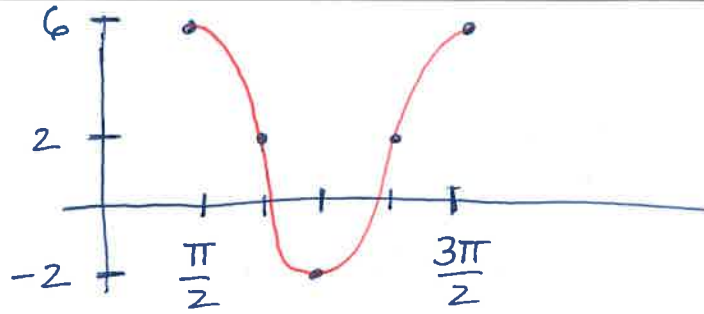
6. Graph  $y = 4 \cos 2(x - \frac{\pi}{2}) + 2$

Amplitude: 4

Vertical Shift: 2

Period:  $\pi$

Phase Shift:  $\frac{\pi}{2}$



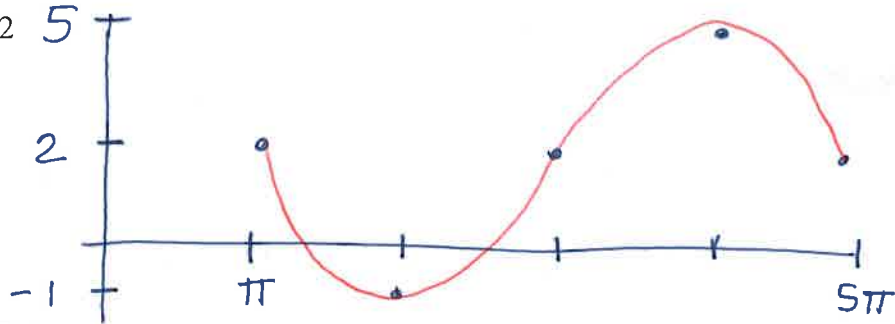
7. Graph  $y = 3 \sin \frac{1}{2}(x - \pi) + 2$

Amplitude: 3

Vertical Shift: 2

Period:  $4\pi$

Phase Shift:  $\pi$



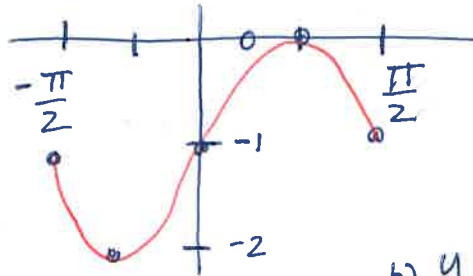
8. Graph  $y = -\sin 2(x + \frac{\pi}{2}) - 1$

Amplitude: 1

Vertical Shift: -1

Period:  $\pi$

Phase Shift:  $-\frac{\pi}{2}$

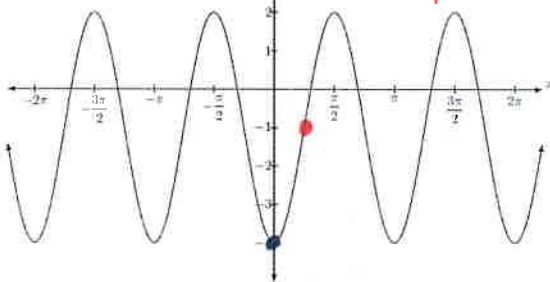


b)  $y = 25 \cos \frac{2\pi}{12}(x) + 30$

b)  $y = -25 \sin \frac{2\pi}{12}(x-3) + 30$

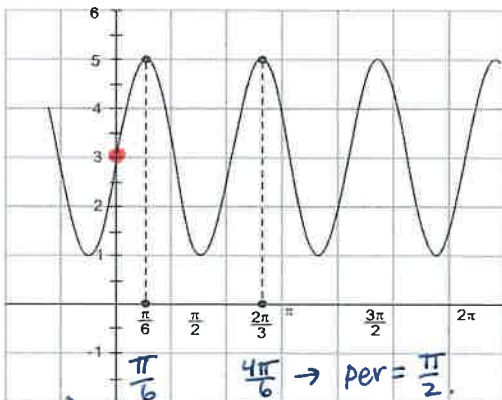
9. Name each graph using a sine AND cosine function.

a)  $y = 3 \sin 2(x - \frac{\pi}{4}) - 1$



a)  $y = -3 \cos 2x - 1$

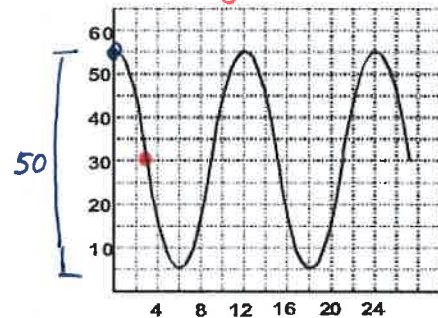
c.



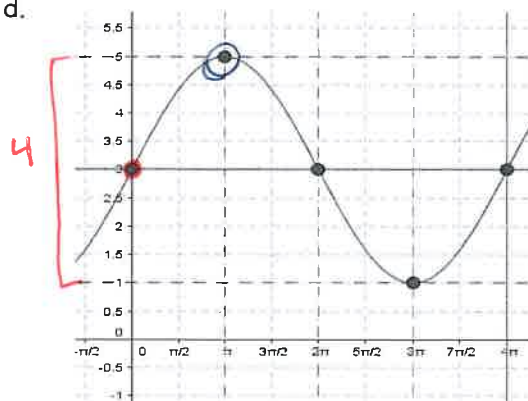
c)  $y = 2 \sin 4x + 3$

c)  $y = 2 \cos 4(x - \frac{\pi}{6}) + 3$

b.



d.



d)  $y = 2 \cos \frac{1}{2}(x - \pi) + 3$

d)  $y = 2 \sin \frac{1}{2}x + 3$