

On the graph paper provided, graph each of the following functions.

1. $y = 2 \sin 4x$

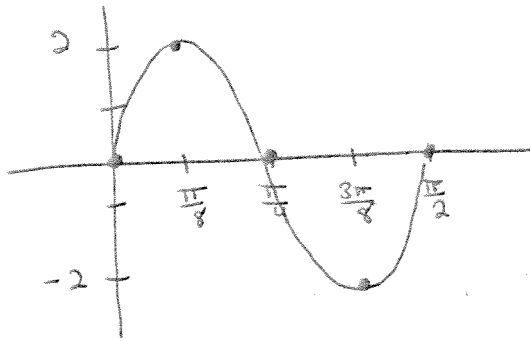
Amplitude: 2

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

X-scale factor: $\frac{\pi}{8}$

Phase shift: 0

Vertical shift: 0



2. $4 \cos\left(\frac{1}{2}x + \frac{\pi}{2}\right) = 4 \cos\frac{1}{2}(x + \pi)$

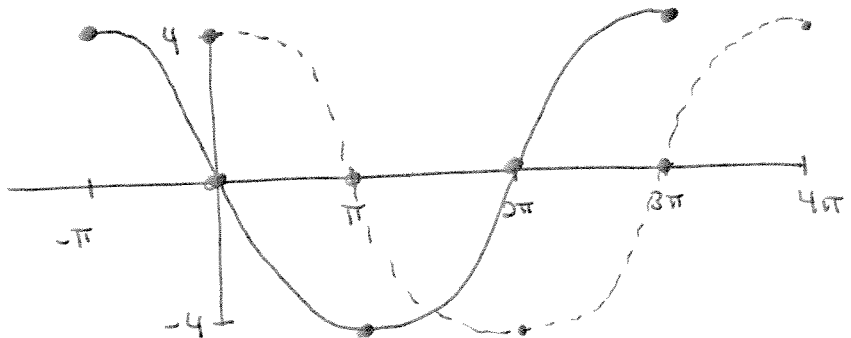
Amplitude: 4

Period: 4π

X-scale factor: π

Phase shift: π left

Vertical shift: 0



3. $1 - 2 \cos\left(\frac{1}{2}x\right)$

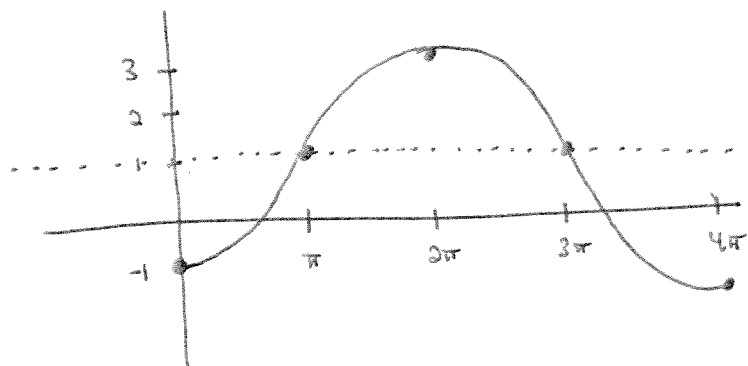
Amplitude: 2 (reflect)

Period: 4π

X-scale factor: π

Phase shift: 0

Vertical shift: up 1



4. $\frac{1}{2} + \sin 2\left(x + \frac{\pi}{4}\right)$

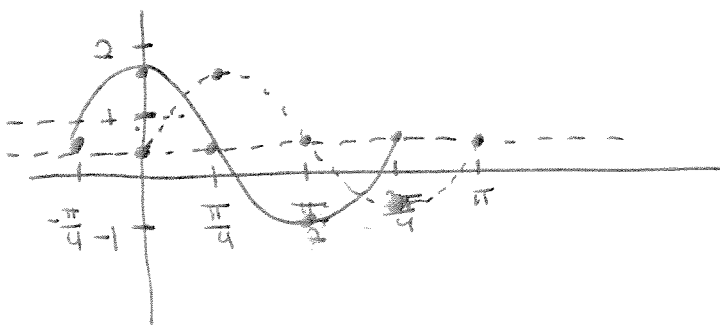
Amplitude: 1

Period: π

X-scale factor: $\frac{\pi}{4}$

Phase shift: $\frac{\pi}{4}$ left

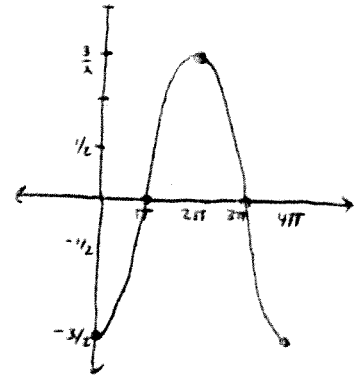
Vertical shift: up 1/2



Determine the equation for the given graph.

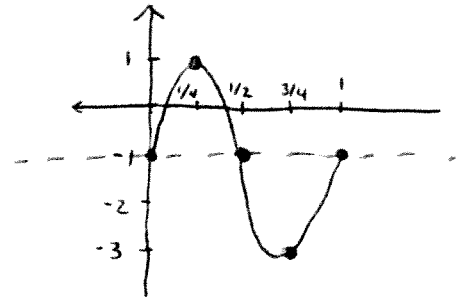
5. Amplitude $3/2$ (reflect) a: $-3/2$
 Period 4π $4\pi = \frac{2\pi}{b}$ b: $1/2$
 Phase Shift: 0 c: 0
 Vertical Shift: 0 d: 0

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



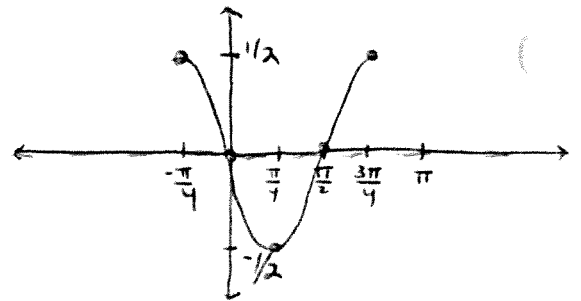
6. Amplitude 2 a: 2
 Period 1 $1 = \frac{2\pi}{b}$ b: 2π
 Phase Shift: 0 c: 0
 Vertical Shift: down 1 d: -1

$$y = -1 + 2 \sin 2\pi x$$



7. Amplitude $1/2$ a: $1/2$
 Period π $\pi = \frac{2\pi}{b}$ b: 2
 Phase Shift: $\pi/4$ left c: $\pi/4$
 Vertical Shift: 0 d: 0

$$y = \frac{1}{2} \cos 2\left(x + \frac{\pi}{4}\right)$$



8. Amplitude 2 a: 2
 Period 2π b: 1
 Phase Shift: π right c: $-\pi$
 Vertical Shift: up 1 d: 1

$$y = 1 + 2 \sin(x - \pi)$$

