

Sinusoidal Functions: Graphing Practice

Goal: Practice with the graphs of trig functions. Understand their characteristics (amplitude, period, midline, phase shift)

Graph the following sinusoidal functions.

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

3.

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

4.

$$y = \frac{2}{3}\cos\left(\frac{\pi}{5}(x - 3)\right) + 1$$

5.

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

6.

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

7.

$$y = 5 \cos\left(\frac{1}{6}(x - \pi)\right) - 3$$

8.

$$y = -4 \sin\left(\frac{2\pi}{3}(x + 2)\right) - 2$$

9.

$$y = \frac{5}{2} \sin\left(\frac{4\pi}{9}(x - 2)\right) - \frac{3}{2}$$

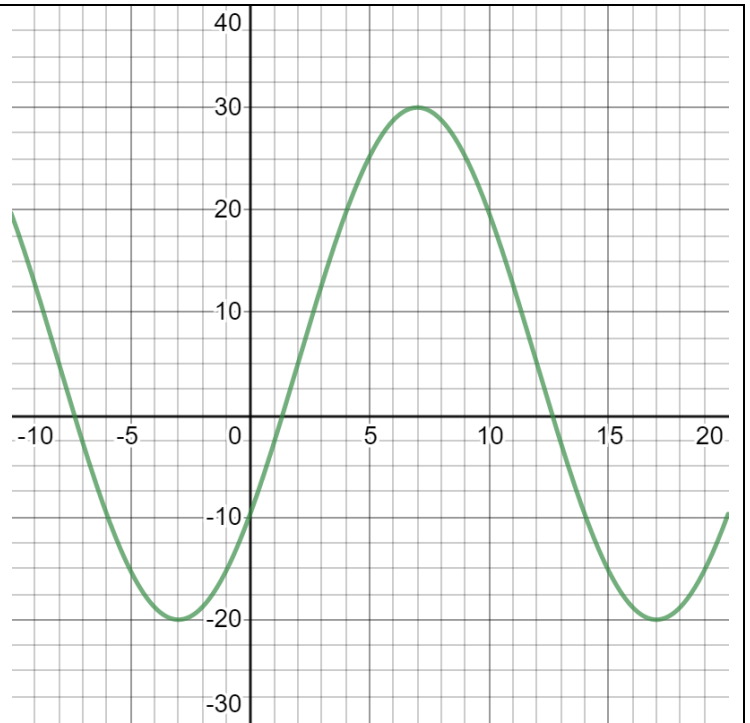
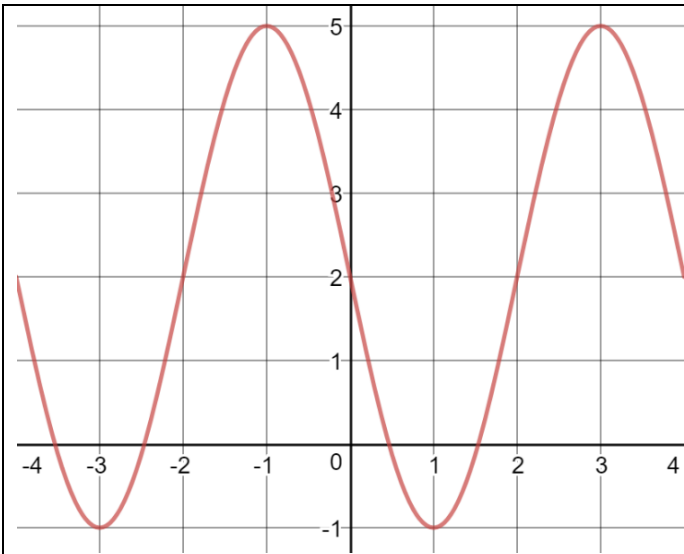
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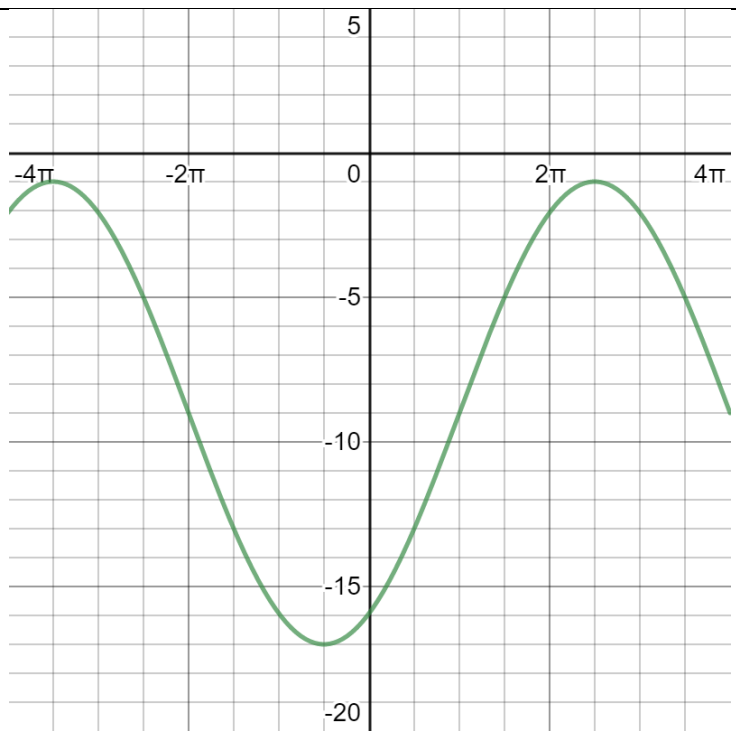
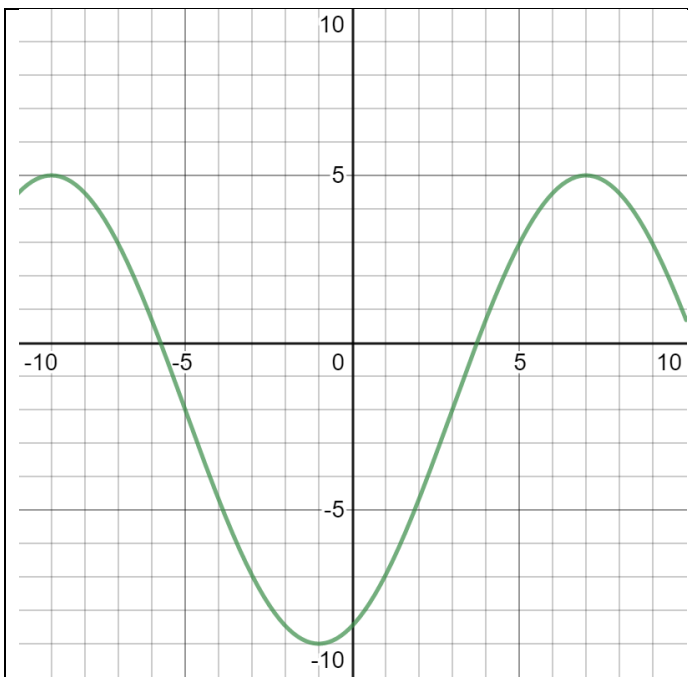
$$y = -\frac{1}{2} \cos\left(\frac{3}{2}(x - 1)\right) + \frac{5}{2}$$

11.

$$y = -\frac{4}{5} \sin\left(-\frac{1}{3}(x + 4)\right) + 4$$

Identify the characteristics of the following graphs or description and build at least two equations (sine and cosine) that would have those characteristics.





There is a maximum at $\left(\frac{3\pi}{2}, 3\right)$ and the nearest minimum is at $\left(\frac{9\pi}{2}, -5\right)$.

There is a maximum at $(26, 93)$ and the nearest minimum is at $(77, 1)$.

There is a minimum at $(-83, -35)$ and the function passes the midline next at $(-7, 16)$

There are two consecutive intersections of the midline at $(-\frac{5\pi}{9}, -8)$ and $(\frac{5\pi}{3}, -8)$ and the function has a minimal value of -12 .