

■ State the amplitude, frequency, period, and phase shift of the following. Graph the following by hand *and* on a calculator.

[1]  $f(x) = \sin(2x - \frac{\pi}{4})$

[2]  $f(x) = \sin(2x + \frac{\pi}{3})$

[3]  $f(x) = \sin \frac{1}{3}(2x + \frac{\pi}{3})$

[4]  $f(x) = \sin \frac{1}{2}(3x + \frac{\pi}{4})$

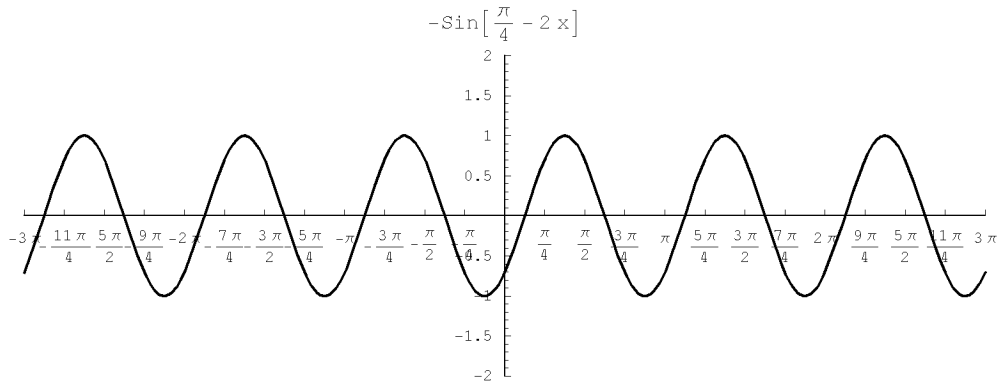
[5]  $f(x) = \sin 3(\frac{1}{2}x - \frac{\pi}{4})$

[6]  $f(x) = \sin 6(2x - \frac{\pi}{3})$  Only graph on calculator

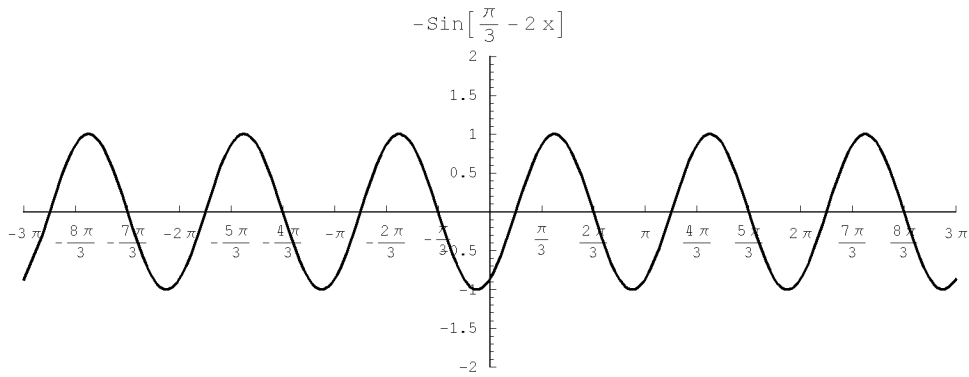
[7] Graph  $f(x) = -\sin x$  and  $\sin(x - \pi)$ . What do you notice? Could you have predicted this merely by knowing the basic identities?

# Answers

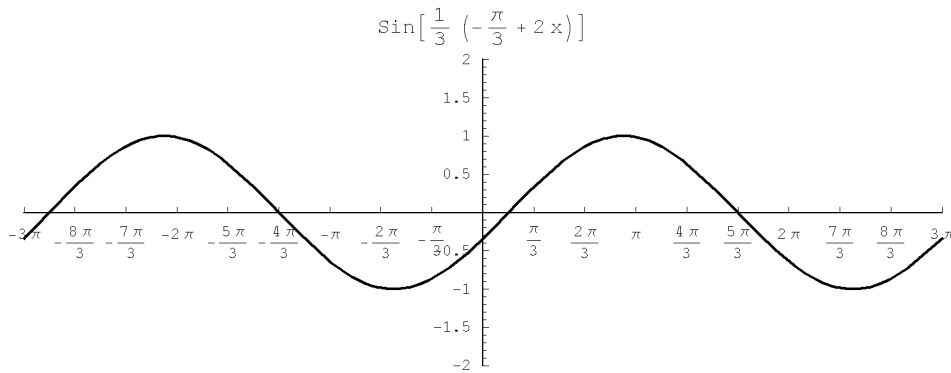
[1]  $f(x) = \sin(2x - \frac{\pi}{4})$



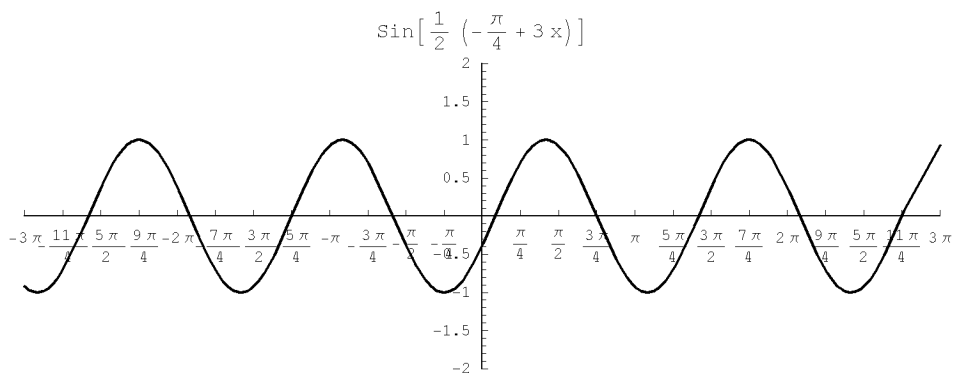
[2]  $f(x) = \sin(2x + \frac{\pi}{3})$



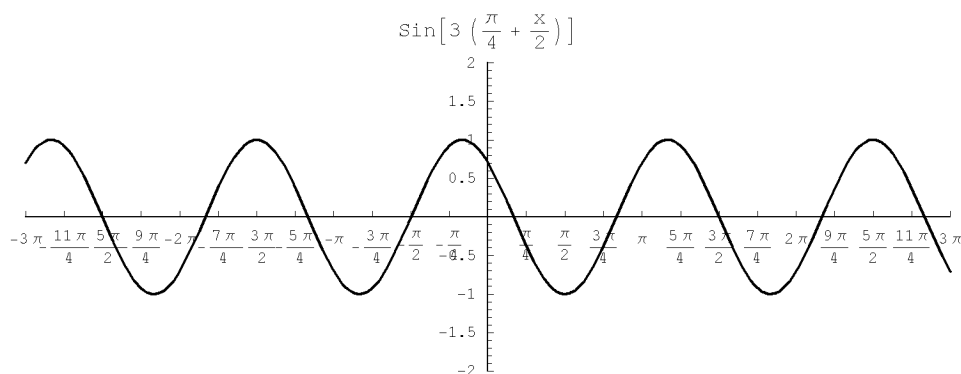
[3]  $f(x) = \sin \frac{1}{3} (2x + \frac{\pi}{3})$



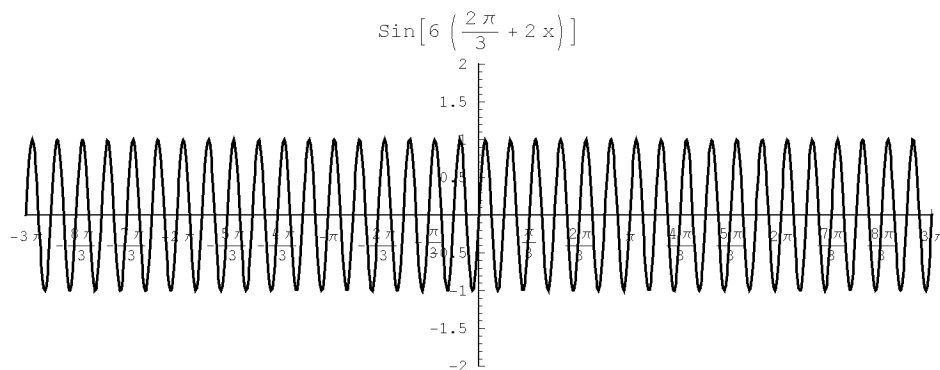
[4]  $f(x) = \sin \frac{1}{2} (3x + \frac{\pi}{4})$



[5]  $f(x) = \sin 3(\frac{1}{2}x - \frac{\pi}{4})$



[6]  $f(x) = \sin 6(2x - \frac{\pi}{3})$  Only graph on calculator



[7] Will discuss in class.