 Name:_____

Sketch at least one cycle of the graph of each function. Draw and label the axes appropriately. Determine the period, range, and amplitude for each function, as required.

1. $y = 3\sin(x)$

period: _____
range: _____
amplitude: _____

2. $y = \cos(\pi x)$

period: _____
range: _____
amplitude: _____

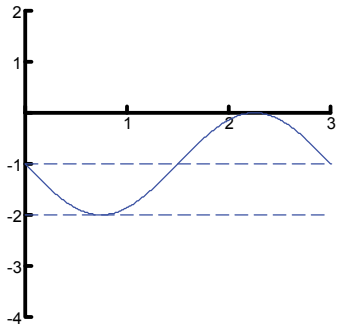
3. $y = \cos\left(x + \frac{\pi}{4}\right)$

period: _____
range: _____
amplitude: _____

4. $y = -\sin(x) + 2$

period: _____
range: _____
amplitude: _____

5. Determine the amplitude and period for the sine curve in the accompanying graph. Write its equation in the form $y = A\sin(B[x - C]) + D$.



period: _____ *amplitude:* _____

equation: _____

Sketch at least one cycle of the graph of each function. Draw and label the axes appropriately. Determine the period, asymptotes, and range for each function.

6. $y = \sec(2x) + 1$

period: _____
asymptotes: _____
range: _____

7. $y = \tan\left(x - \frac{\pi}{6}\right)$

period: _____
asymptotes: _____
range: _____

8. $y = \frac{1}{2}\csc(x)$

period: _____
asymptotes: _____
range: _____

Solve each problem.

9. Graph the function $y = \sin x + 2\cos x$ for x between -2π and 2π using the technique of adding the y-coordinates. Draw and label the axes appropriately.

10. The wave height at a certain Hawaiian beach oscillates sinusoidally. On one day, Kev notes the minimum height is 2 feet at 8:00 a.m. and the maximum height is 14 feet at 2:15 p.m. Express the wave height as a function of time in the form $y = A\sin[B(x - C)] + D$, where 7:00 a.m. is considered time zero.

10. _____