Curve Sketch Practice

Goals:

- Sketch one sine or cosine function
- Given a graph of a cosecant or secant, list features and create a possible equation.

8. Sketch each graph for $0 \leq x \leq 2\pi$. Verify your sketch using graphing technology.

a) $y = 3\sin\left(2\left(x - \frac{\pi}{6}\right)\right) + 1$

b) $y = 5\cos\left(x + \frac{\pi}{4}\right) - 2$

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

d) $y = -\cos\left(0.5x - \frac{\pi}{6}\right) + 3$

e) $y = 0.5\sin\left(\frac{x}{4} - \frac{\pi}{16}\right) - 5$

f) $y = \frac{1}{2}\cos\left(\frac{x}{2} - \frac{\pi}{12}\right) - 3$

Transformations of Trigonometric Functions II

1. Graph at least 2 cycles for each function. State the amplitude, period, distance between points, phase shift, vertical displacement, and equation of the axis of the curve. State the domain and the range. For secant and cosecant, the amplitude will refer to that of the corresponding reciprocal function. Label the equations of all vertical asymptotes.

a) $y = 3\cos 2x + 2$

b) $y = -2.5\sin\left(x - \frac{\pi}{6}\right) + 5$

c) $f(x) = 3\csc(3x - 4\pi)$

d) $g(x) = \sec\left(\frac{1}{3}x - 2\pi\right) + 2$

e) $y = -3\cos(-x + \pi)$

f) $y = 5\csc(\pi\theta - 3\pi) - 2$

g) $h(x) = -2\sec\left(\frac{1}{4}x + \pi\right) - 5$

h) $y = -2\csc\left(\frac{2}{3}\theta + \frac{\pi}{5}\right) + 6$

Transformations of Trigonometric Functions

1. Sketch at least 1 cycle of the graph of the function $f(x) = -2\sec\left[2\left(x - \frac{\pi}{3}\right)\right] - 1$ and state all the features of the graph.

Amplitude: _____

Equation of Axis: _____

Maximum Value: _____

Minimum Value: _____

Period: _____

Start of Cycle: _____

End of Cycle: _____