

Name: _____

Graph of Secant and Cosecant Functions

1) Sketch the graphs of the following:

1) $y = 3 \sec(-x + 2\pi)$

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

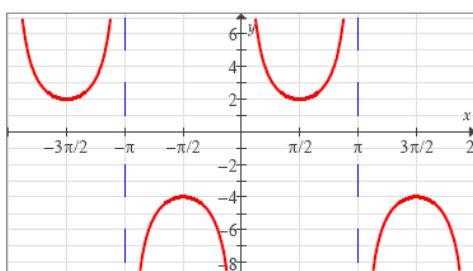
3) $y = 2 \csc 4x$

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

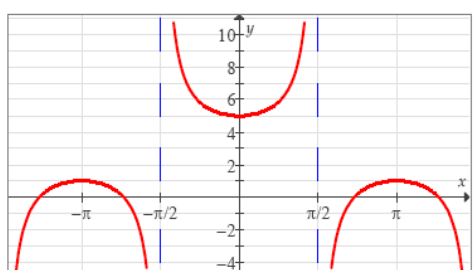
2) For each of the following graphs,

(a) Give an equation of the form $f(x) = A \sec(Bx + C) + D$ which could be used to represent the graph.(b) Give an equation of the form $f(x) = A \csc(Bx + C) + D$ which could be used to represent the graph.

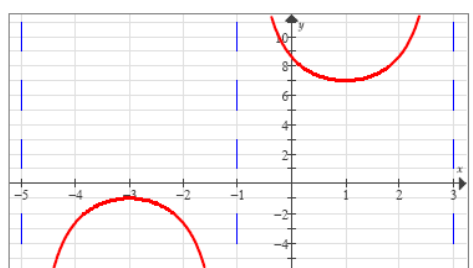
1)



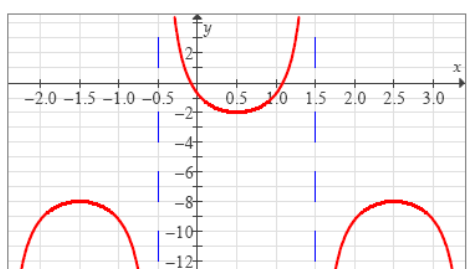
2)



3)



4)



- 3) The left-hand column contains equations that represent transformations of $f(x) = \csc(x)$. Match the equations on the left with the description on the right of how to obtain the graph of $y=g(x)$ from the graph of f .

1) $y = \frac{1}{2} \csc(3x + \pi)$

A) Reflect in the x - axis stretch horizontally by a factor of 3 then shift left π units

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

B) Shrink vertically by a factor of $\frac{1}{2}$, shrink horizontally by a factor of $\frac{1}{3}$, then shift left $\frac{\pi}{3}$ units

3) $y = 2 \csc(3x) + \pi$

C) Stretch vertically by a factor of 2, shrink horizontally by a factor of $\frac{1}{3}$, then shift upward π units

4) $y = 2 \csc\left[\frac{1}{3}\left(x + \frac{\pi}{3}\right)\right]$

D) Stretch vertically by a factor of 2, stretch horizontally by a factor of 3, then shift left $\frac{\pi}{3}$ units

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

E) Reflect in the x - axis, stretch horizontally by a factor of 3, then shift upward π units

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

F) Shrink vertically by a factor of $\frac{1}{2}$, shrink horizontally by a factor of $\frac{1}{3}$, then shift left π units