# Graphing Cosecant and Secant
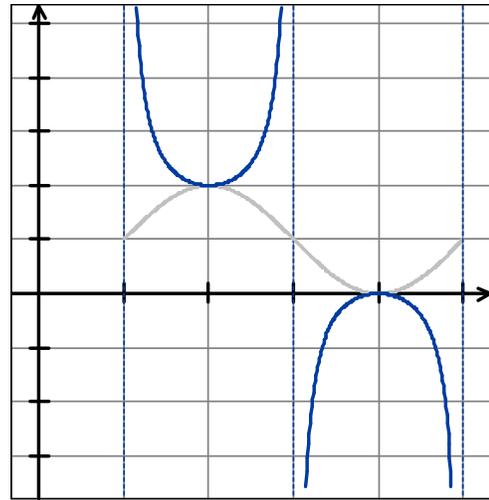
To graph $y = k + A\csc(B(x - h))$ or $y = k + A\sec(B(x - h))$:

1. For cosecant, graph the corresponding sine function using faded or dashed lines, for secant, use the corresponding cosine function. (Don't forget the period is $\frac{2\pi}{B}$)
2. After shifting the graph $h$ units (*before* applying the vertical translation), draw vertical asymptotes at the $x$-intercepts.
3. After applying the vertical translation to the graph $k$ units up or down, plot the vertices of your cosecant or secant graph on the maximums & minimums of the sine or cosine graph.
4. Complete the cosecant or secant graph by drawing parabola-shaped graphs between the asymptotes as shown below.
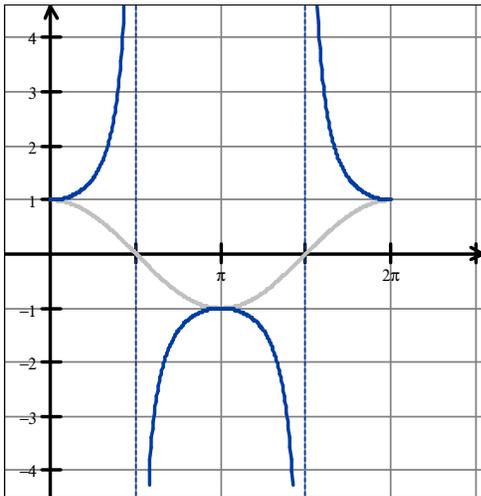
**The Graph of $y = \csc x$**
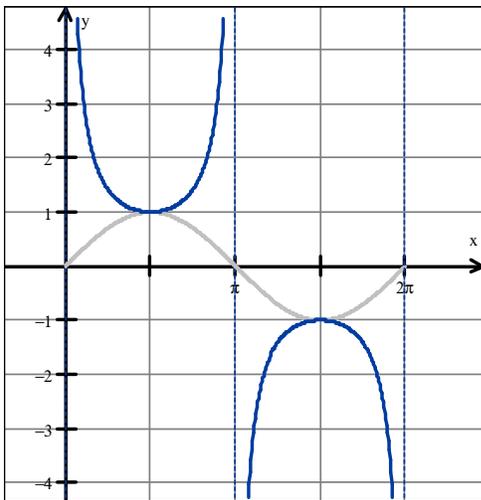
**The Graph of $y = k + A\csc(B(x - h))$**

**The Graph of $y = \sec x$**

**The Graph of $y = k + A\sec(B(x - h))$**