Algebra II/Trig B Name _____

Trigonometric Graphs #4
Secant, Cosecant, and Cotangent
With Shifts

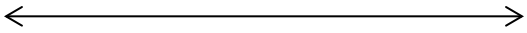
Determine the amplitude or critical points, period and phase shifts or asymptotes. Then graph one period of the function.

1. $y = \csc\left(x + \frac{\pi}{2}\right) - 1$

Amplitude: ____

Period: ____

Phase Shift: _____

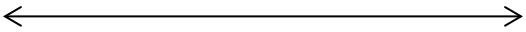


2. $f(x) = 2\sec\left(\pi x - \frac{\pi}{2}\right)$

Amplitude: ____

Period: ____

Phase Shift: ____

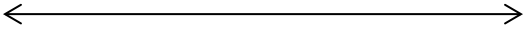


3. $y = -3\cot\left(\pi x - \frac{\pi}{4}\right)$

Critical Points: ____

Period: ____

Asymptotes: _____

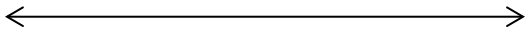


4. $f(x) = \cot\frac{x}{2} + 2$

Critical Points: ____

Period: ____

Asymptotes: _____



5. $y = -\csc 2\pi x - 1$

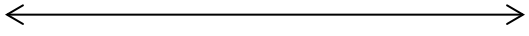
Amplitude: ____

Period: ____

6. $f(x) = 2\sec\frac{x}{4} - 1$

Amplitude: ____

Period: ____

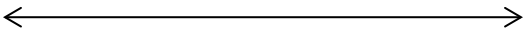


7. $f(x) = -\sec\left(\pi x + \frac{\pi}{2}\right) - 1$

Amplitude: ____

Period: ____

Phase Shift: ____

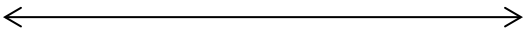


8. $y = \cot\left(\frac{\pi}{4}x - \frac{\pi}{2}\right) + 1$

Critical Points: ____

Period: ____

Asymptotes: _____

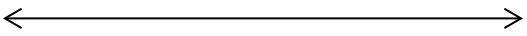


9. $f(x) = -\csc\left(x - \frac{\pi}{2}\right) + 1$

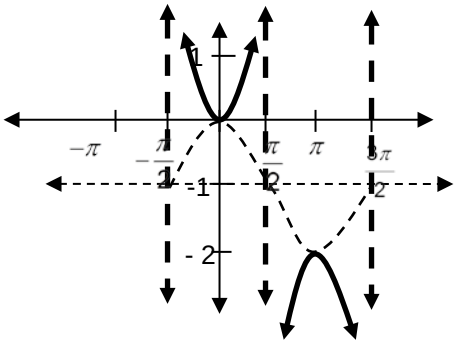
Amplitude: ____

Period: ____

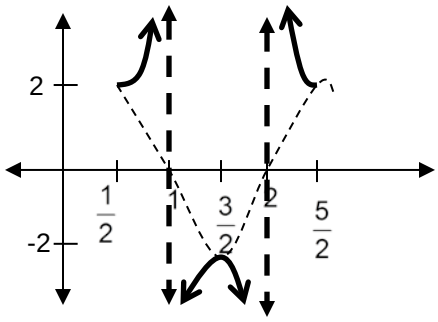
Phase Shift: ____



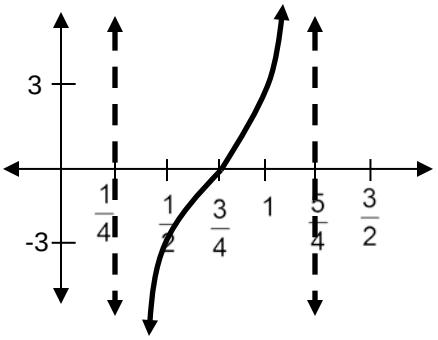
1. Amplitude: 1
   Period: 2π
   Phase Shift: $\frac{-\pi}{2}$



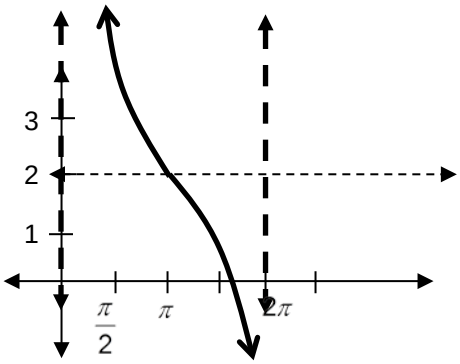
2. Amplitude: 2
   Period: 2
   Phase Shift: $\frac{1}{2}$



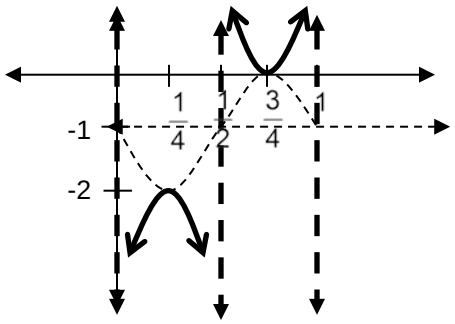
3. Critical Points: -3, 3
   Period: 1
   Asymptotes: $x = \frac{1}{4}$ and $x = \frac{5}{4}$



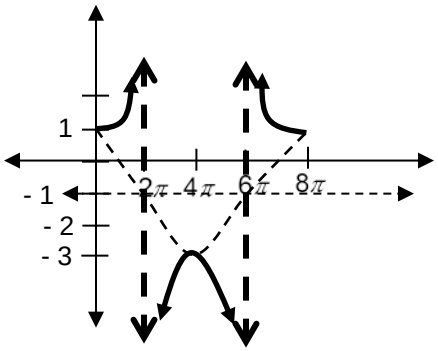
4. Critical Points: 1, 3
   Period: 2π
   Asymptotes: $x = 0$ and $x = 2\pi$



5. Amplitude: 1
   Period: 1

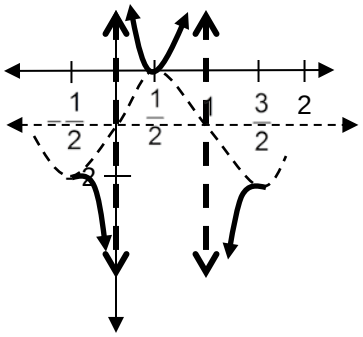


6. Amplitude: 2
   Period: 8π



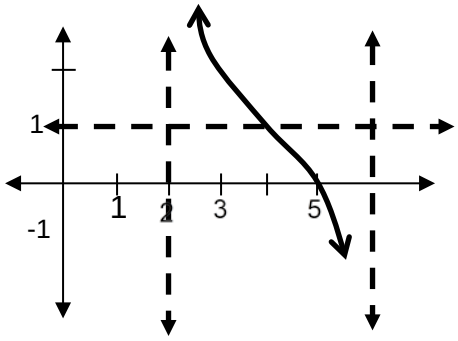
7. Amplitude: 1
   Period: 2

   Phase Shift: $-\frac{1}{2}$



8. Critical Points: 0, 2
   Period: 4

   Asymptotes: $x = 2$ and $x = 6$



9. Amplitude: 1
   Period: 2π

   Phase Shift: $\frac{\pi}{2}$