Math Virtual Learning

Precalculus with Trigonometry

May 22, 2020

Precalculus with Trigonometry
Lesson: May 22, 2020

Objective/Learning Target:
Students will review how to graph trig functions.

Let's Get Started:

As a review of graphing trig functions, please watch the video below in its entirety. The video covers not only sine, cosine, and tangent, but it also covers the other 3 functions as well.

Watch Video: [Graphing Trigonometric Functions](#)

Notice that sine and cosine are very similar, but cosine is basically the graph of sine shifted pi/2 to the left.


$y = \sin(x)$

$y = \cos(x)$
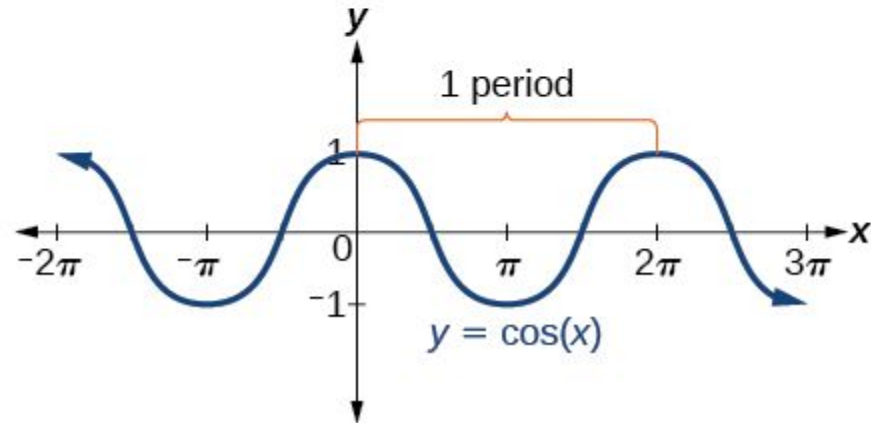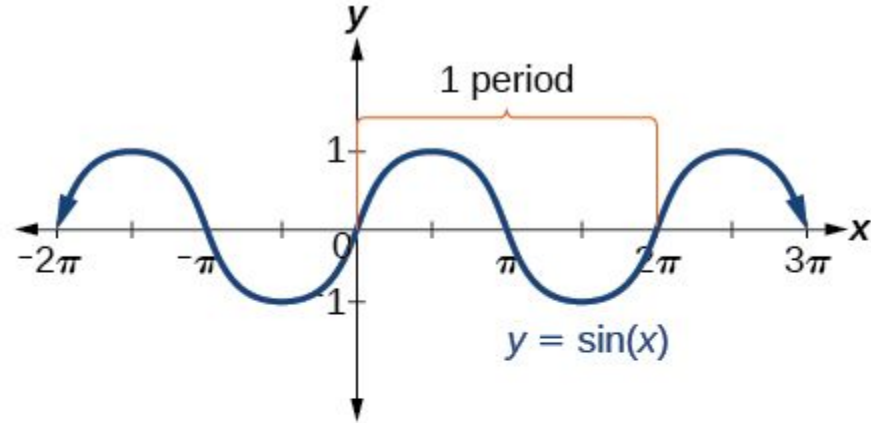
Here are the graphs of tangent and cotangent. Notice that the graphs are similar, but the asymptotes and zeros get switched. In other words the x-value that is a zero for tangent is the location of a vertical asymptote for cotangent and vice versa.
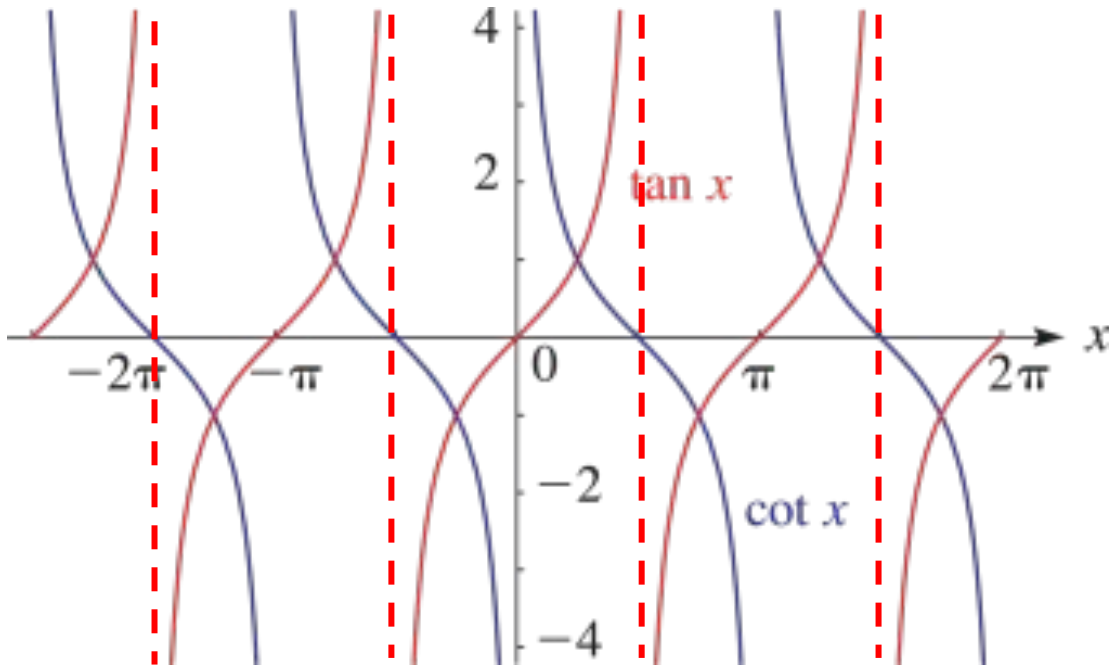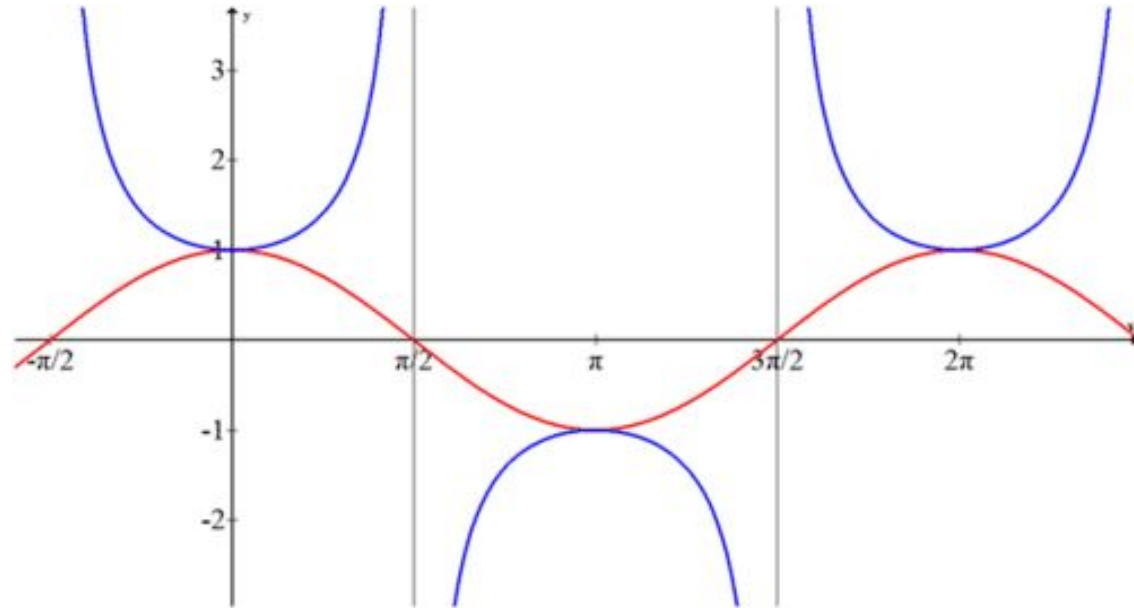
Notice that the cosecant and secant graphs are basically turning the graphs of sine and cosine inside out. What I mean is that it flips each portion of the graph and wherever sine or cosine are equal to zero, there is an asymptote for the cosecant or secant graphs.

Cosecant
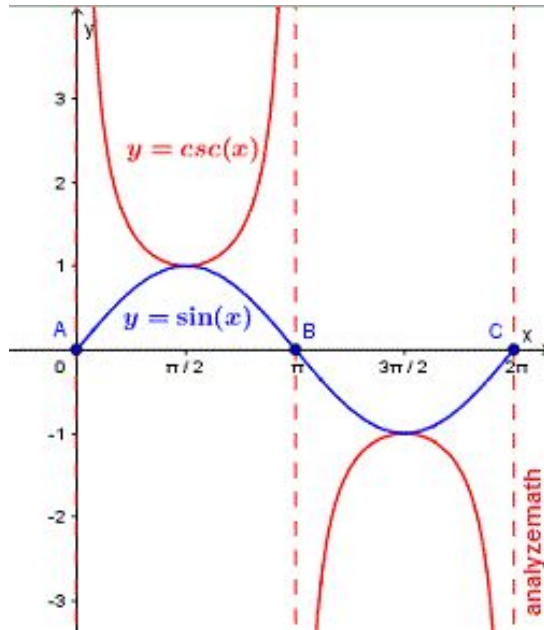
Secant

Transformations of Trig Graphs

Watch the video below for more practice on transformation of sine and cosine. Please note that transformations for the other trig functions will work in a similar fashion.

Video: Graphing Sine and Cosine Functions with Transformations (Multiple Examples)

$$y = A \sin B(x - C) + D$$

*** Please note that the variables used may change from teacher to teacher, but the transformations will stay the same. For instance the video above used h and k instead of C and D.

A - Amplitude changes
B - Period changes
C - Phase shift AKA horizontal shift
D - Vertical shift

Practice

Click the link below to practice graphing trig functions. Answers are included at the end of the document.

[Graphing Trig Functions Practice](#)

Additional Resources:

For additional videos, examples, and practice problems review the lessons from April 15th - 22nd.

Sine & Cosine Graphs - April 15th
Tangent & Cotangent Graphs - April 16th
Cosecant & Secant Graphs - April 17th
Transformations of Trig Graphs - April 20th, 21st, & 22nd