

Section 4.6 Graphs of Other Trigonometric Functions

Objective: In this lesson you learned how to sketch the graphs of other trigonometric functions.

Course Number

Instructor

Date

Important Vocabulary

Define each term or concept.

Damping factor**I. Graph of the Tangent Function** (Pages 309–311)

Because the tangent function is odd, the graph of $y = \tan x$ is symmetric with respect to the _____. The period of the tangent function is _____. The tangent function has vertical asymptotes at $x = \frac{n\pi}{2}$, where n is an integer. The domain of the tangent function is _____, and the range of the tangent function is _____.

Describe how to sketch the graph of a function of the form $y = a \tan(bx - c)$.

What you should learn

How to sketch the graphs of tangent functions

II. Graph of the Cotangent Function (Page 311)

The period of the cotangent function is _____. The domain of the cotangent function is _____, and the range of the cotangent function is _____.

What you should learn

How to sketch the graphs of cotangent functions

The vertical asymptotes of the cotangent function occur at $x = \underline{\hspace{2cm}}$, where n is an integer.

III. Graphs of the Reciprocal Functions (Pages 312–313)

At a given value of x , the y -coordinate of $\csc x$ is the reciprocal of the y -coordinate of $\underline{\hspace{2cm}}$.

The graph of $y = \csc x$ is symmetric with respect to the $\underline{\hspace{2cm}}$. The period of the cosecant function is $\underline{\hspace{2cm}}$. The cosecant function has vertical asymptotes at $x = \underline{\hspace{2cm}}$, where n is an integer. The domain of the cosecant function is $\underline{\hspace{2cm}}$, and the range of the cosecant function is $\underline{\hspace{2cm}}$.

At a given value of x , the y -coordinate of $\sec x$ is the reciprocal of the y -coordinate of $\underline{\hspace{2cm}}$. The graph of $y = \sec x$ is symmetric with respect to the $\underline{\hspace{2cm}}$.

The period of the secant function is $\underline{\hspace{2cm}}$. The secant function has vertical asymptotes, at $x = \underline{\hspace{2cm}}$. The domain of the secant function is $\underline{\hspace{2cm}}$, and the range of the secant function is $\underline{\hspace{2cm}}$.

To sketch the graph of a secant or cosecant function, . . .

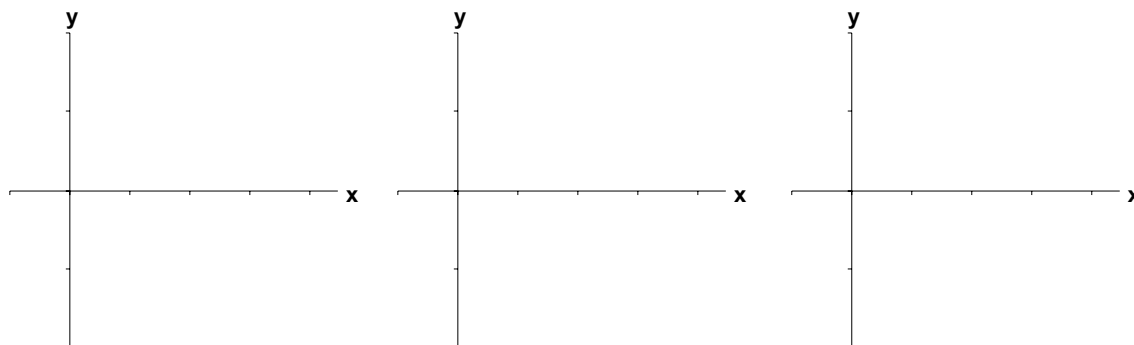
In comparing the graphs of the cosecant and secant functions with those of the sine and cosine functions, note that the “hills” and “valleys” are $\underline{\hspace{2cm}}$.

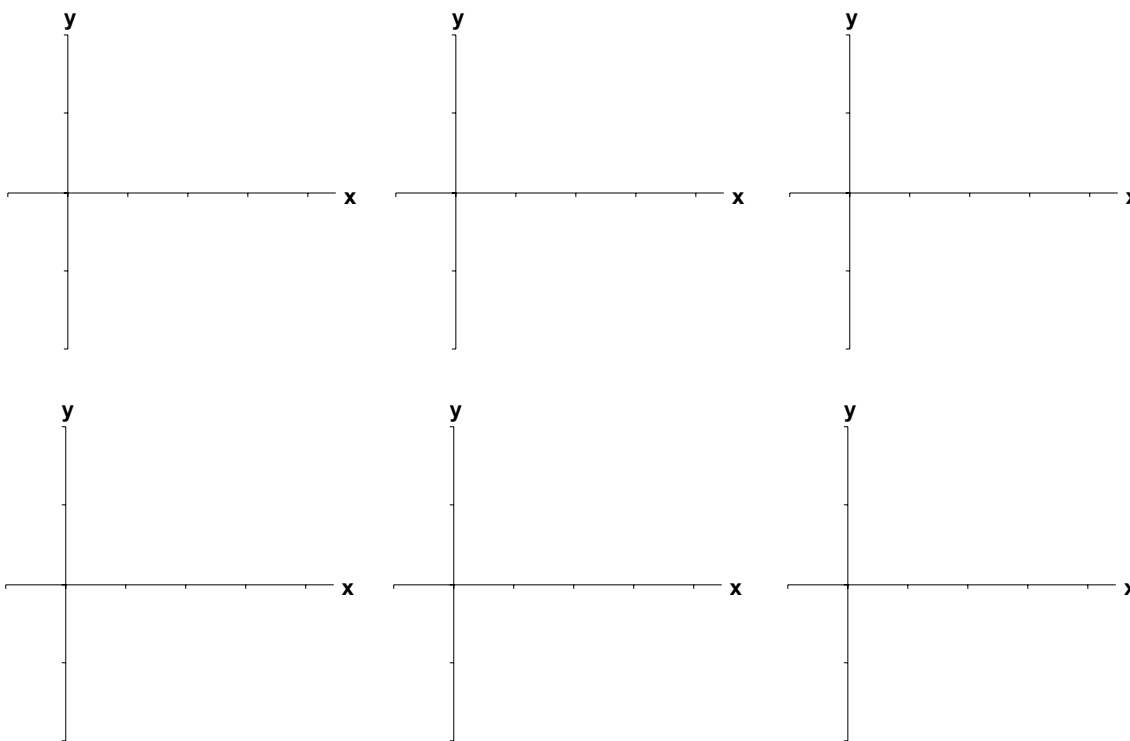
What you should learn
How to sketch the graphs of secant and cosecant functions

IV. Damped Trigonometric Graphs (Pages 314–315)

Explain how to sketch the graph of the damped trigonometric function $y = f(x)\cos x$, where $f(x)$ is the damping factor.

What you should learn
How to sketch the graphs of damped trigonometric functions

Additional notes

Additional notes**Homework Assignment**

Page(s)

Exercises