

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 401–402)

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 _____. On the interval $[0, \mathbf{p}]$, the tangent function is undefined, and thus has a vertical asymptote, at $x =$ _____. 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 403)

The graph of $y = \cot x$ is symmetric with respect to the _____. The period of the cotangent function is _____. On the interval $(0, \mathbf{p}]$, the cotangent function is undefined, and thus has a vertical asymptote, at $x =$ _____.

What you should learn

How to sketch the graphs of cotangent functions

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

III. Graphs of the Reciprocal Functions (Pages 404–405)

At a given value of x , the y -coordinate of $\csc x$ is the reciprocal of the y -coordinate of _____.

The graph of $y = \csc x$ is symmetric with respect to the _____.
The period of the cosecant function is _____.
On the interval $(0, \boldsymbol{p}]$, the cosecant function is undefined, and thus has a vertical asymptote, at $x =$ _____.

The domain of the cosecant function is _____,
and the range of the cosecant function is _____.

At a given value of x , the y -coordinate of $\sec x$ is the reciprocal of the y -coordinate of _____.

The graph of $y = \sec x$ is symmetric with respect to the _____.
The period of the secant function is _____.

On the interval $[0, \boldsymbol{p}]$, the secant function is undefined, and thus has a vertical asymptote, at $x =$ _____.
The domain of the secant function is _____, and
the range of the secant function is _____.

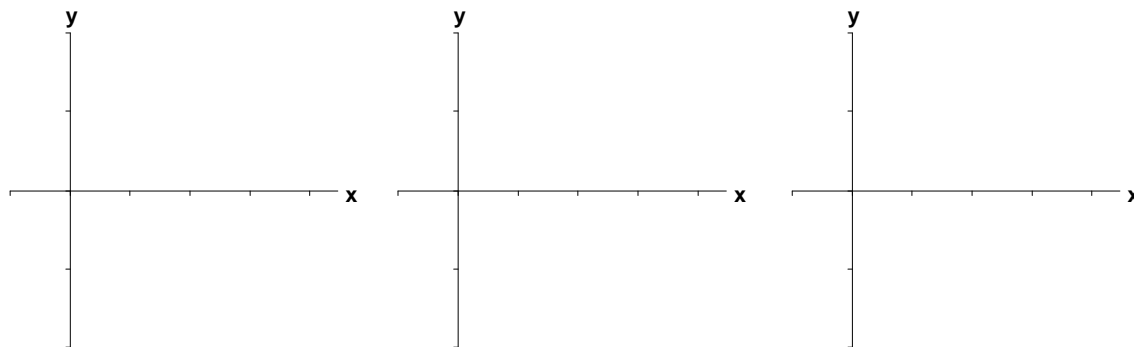
To sketch the graph of a secant or cosecant function, . . .

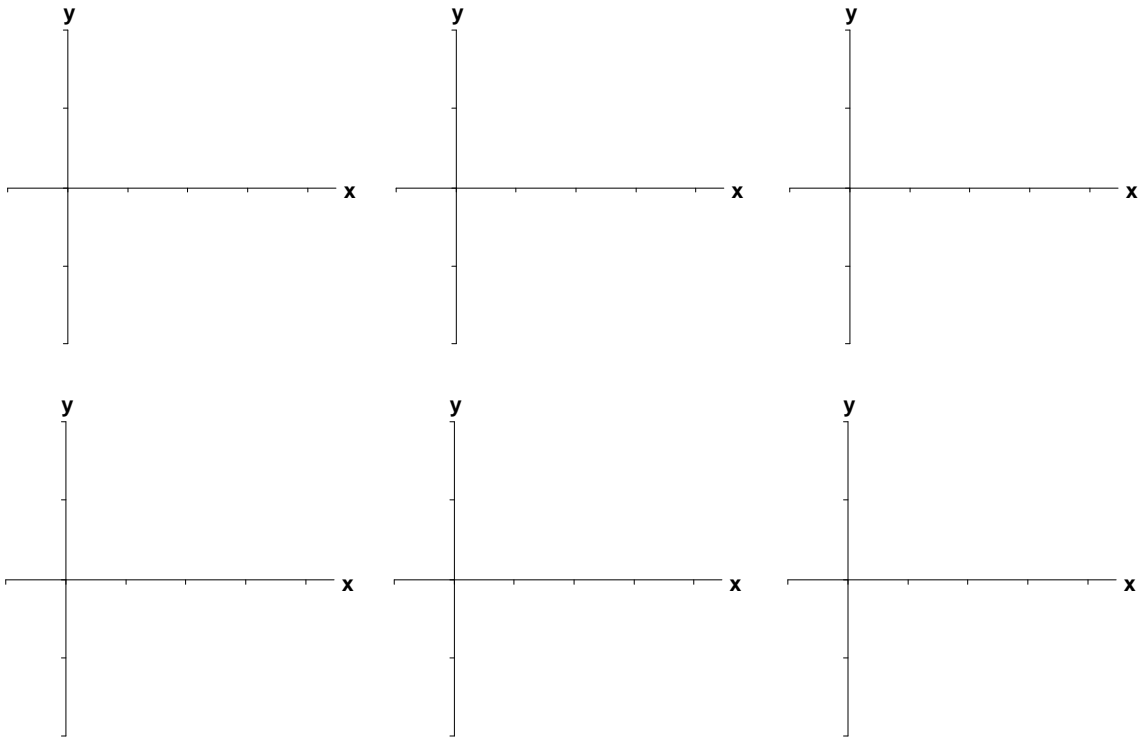
What you should learn
How to sketch the graphs of secant and cosecant functions

IV. Damped Trigonometric Graphs (Pages 406–407)

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