

Section 5.3 Trigonometric Functions of Any Angle

Objective: In this lesson you learned how to evaluate trigonometric functions of any angle.

Course Number

Instructor

Date

Important Vocabulary

Define each term or concept.

Reference angles

Period

I. Introduction (Pages 388–389)

Let q be an angle in standard position with (x, y) a point on the terminal side of q and $r = \sqrt{x^2 + y^2} \neq 0$. Complete the following definitions of the trigonometric functions of any angle:

$$\sin q = \underline{\hspace{2cm}} \qquad \cos q = \underline{\hspace{2cm}}$$

$$\tan q = \underline{\hspace{2cm}} \qquad \cot q = \underline{\hspace{2cm}}$$

$$\sec q = \underline{\hspace{2cm}} \qquad \csc q = \underline{\hspace{2cm}}$$

Name the quadrants in which the sine function is positive.

Name the quadrants in which the sine function is negative.

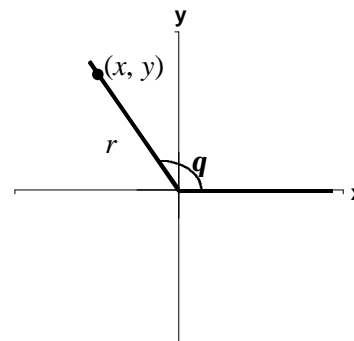
Name the quadrants in which the cosine function is positive.

Name the quadrants in which the cosine function is negative.

Name the quadrants in which the tangent function is positive.

Name the quadrants in which the tangent function is negative.

What you should learn
How to evaluate trigonometric functions of any angle



Example 1: If $\sin q = \frac{1}{2}$ and $\tan q < 0$, find $\cos q$.

II. Reference Angles (Pages 390–393)

Example 2: Find the reference angle q' for

- (a) $q = 210^\circ$ (b) $q = 4.1$

What you should learn

How to use reference angles to evaluate trigonometric functions

To find the value of a trigonometric function of any angle q , . . .

Example 3: Evaluate $\sin \frac{11\pi}{6}$.

III. Trigonometric Functions of Real Numbers

(Pages 394–396)

The sine function's domain is _____,
and its range is _____.

The cosine function's domain is _____,
and its range is _____.

The period of the sine function is _____. The
period of the cosine function is _____.

Which trigonometric functions are even functions?

Which trigonometric functions are odd functions?

What you should learn

How to evaluate trigonometric functions of real numbers

Homework Assignment

Page(s)

Exercises