

Section 4.4 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	

I. Introduction (Pages 312–313)

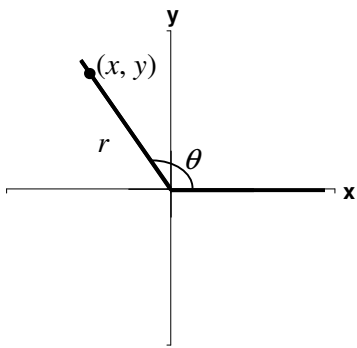
Let θ be an angle in standard position with (x, y) a point on the terminal side of θ and $r = \sqrt{x^2 + y^2} \neq 0$. Complete the following definitions of the trigonometric functions of any angle:

$\sin \theta =$ _____ $\cos \theta =$ _____

$\tan \theta =$ _____ $\cot \theta =$ _____

$\sec \theta =$ _____ $\csc \theta =$ _____

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



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.

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

II. Reference Angles (Page 314)

Example 2: Find the reference angle θ' for
 (a) $\theta = 210^\circ$ (b) $\theta = 4.1$

What you should learn
 How to use reference angles to evaluate trigonometric functions

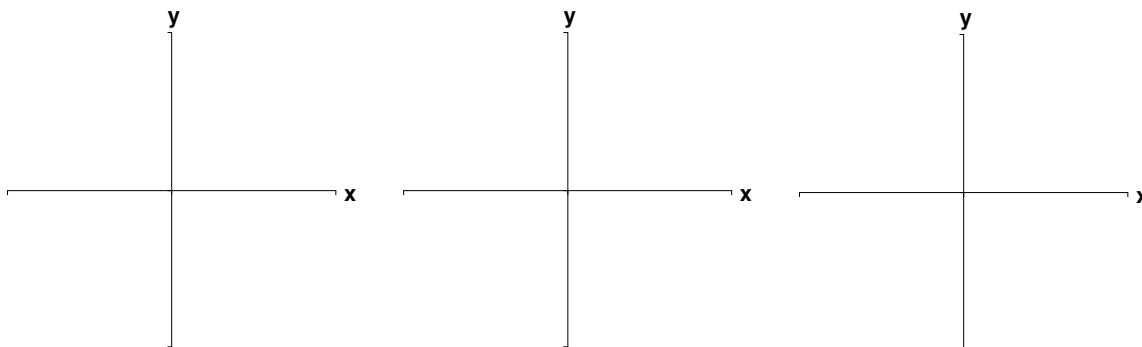
III. Trigonometric Functions of Real Numbers
(Pages 315–317)

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

What you should learn
 How to evaluate trigonometric functions of real numbers

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

Example 4: Evaluate $\cos 240^\circ$.

**Homework Assignment**

Page(s)

Exercises