

Name: _____

Date: _____

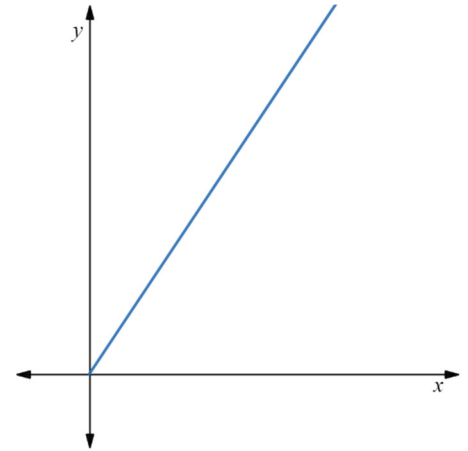
Learning Goal 4.1

Examining angles in standard position in both radians and degrees. Exploring the unit circle, reference and coterminal angles and special angles.

In the diagram, consider θ any angle in standard position. $P(x, y)$ is any point on the terminal arm of angle θ .

$$r =$$

The three **primary trigonometric ratios** are:



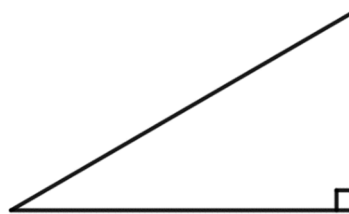
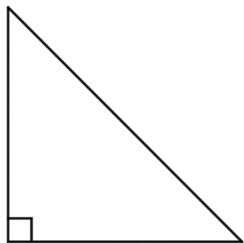
Reciprocal Trigonometric Ratios

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Points on the unit circle

Example The point $(-3/5, 4/5)$ is the point of intersection of the terminal arm of the unit circle and angle, θ , in standard position.

- a. Draw θ .
- b. Find the exact value of the six trigonometric ratios for θ .

Special Triangles

Example Find the exact value of each of the following, include a sketch.

a. $\cos 150^\circ$

b. $\sin\left(\frac{5\pi}{4}\right)$

Example Find the approximate value of each of the following. Include a sketch. Round your answer to three decimal places.

a. $\sin(1.92)$

b. $\cot(-500^\circ)$

c. $\sec\left(\frac{2\pi}{7}\right)$

Example Solve each of the following equations, $0 \leq \theta < 2\pi$.

a. $\tan \theta = \sqrt{3}$

b. $\sec \theta = -\frac{2}{\sqrt{3}}$