

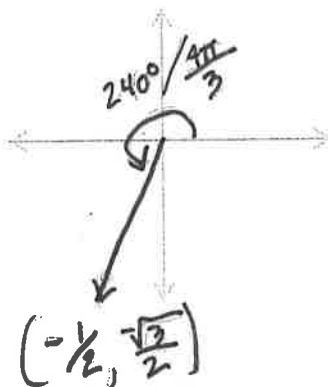
Precalculus

Right Triangle/Unit Circle Trigonometry Review

Name: Key Date: _____

1. Given $\theta = 240^\circ$

a. Sketch the angle in standard position.



b. Convert θ from degrees to radians.

$$\frac{4\pi}{3}$$

c. Find a positive and a negative coterminal angle. Express each answer in degrees and radians.

$$\begin{array}{r} 240 \\ + 360 \\ \hline 600 \end{array} \quad \begin{array}{r} 240 \\ - 360 \\ \hline -120 \end{array}$$

Positive coterminal angle:

$$600^\circ$$

Degrees

$$\frac{10\pi}{3}$$

Radians

$$\frac{4\pi}{3} + \frac{6\pi}{3}$$

Negative coterminal angle:

$$-120^\circ$$

Degrees

$$-\frac{2\pi}{3}$$

Radians

$$\frac{4\pi}{3} - \frac{6\pi}{3}$$

d. Find all six trigonometric functions of θ .

$$\sin \theta = \frac{-\sqrt{3}}{2}$$

$$\csc \theta = \frac{-2\sqrt{3}}{3}$$

$$\cos \theta = -\frac{1}{2}$$

$$\sec \theta = -2$$

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

$$\cot \theta = \frac{\sqrt{3}}{3}$$

2. Find the value of the indicated trigonometric functions for:

a. $\theta = \frac{17\pi}{6}$

$\sin \theta = \frac{1}{2}$

$\cos \theta = \frac{\sqrt{3}}{2}$

$\tan \theta = \frac{\sqrt{3}}{3}$

b. $\theta = \frac{-13\pi}{3}$

$\sin \theta = \frac{\sqrt{3}}{2}$

$\cos \theta = \frac{1}{2}$

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

3. Find the value of the indicated trigonometric functions for:

a. $\theta = \frac{15\pi}{4}$

$\sin \theta = \frac{\sqrt{2}}{2}$

$\cos \theta = \frac{\sqrt{2}}{2}$

$\tan \theta = 1$

$\csc \theta = \sqrt{2}$

$\sec \theta = \sqrt{2}$

$\cot \theta = 1$

b. $\theta = -\frac{17\pi}{3} = -\frac{6\pi}{3} - \frac{11\pi}{3} = -\frac{11\pi}{3} = -\frac{12\pi}{3} + \frac{\pi}{3} = -\frac{4\pi}{3} = \frac{2\pi}{3}$

~~$\sin \theta = \frac{\sqrt{3}}{2}$~~

~~$\cos \theta = \frac{1}{2}$~~

~~$\tan \theta = \sqrt{3}$~~

~~$\csc \theta = \frac{2\sqrt{3}}{3}$~~

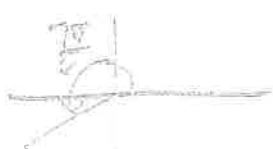
~~$\sec \theta = 2$~~

~~$\cot \theta = \frac{1}{\sqrt{3}}$~~

4. Using special right triangles find value of the following trigonometric function. Each triangle has a hypotenuse of 1.

In this scenario $x = \frac{7\pi}{6}$.

Function/Angle	$\pi - x$ $\frac{\pi}{6}$	$\pi + x$ $\frac{7\pi}{6}$	$2\pi - x$
Sine	$-\frac{1}{2}$	$\frac{1}{2}$	$-\frac{1}{2}$
Cosine	$\frac{\sqrt{3}}{2}$	$-\frac{\sqrt{3}}{2}$	$\frac{\sqrt{3}}{2}$
Tangent	$-\frac{\sqrt{3}}{3}$	$-\frac{\sqrt{3}}{3}$	$\frac{\sqrt{3}}{3}$
Cosecant	-2	2	-2
Secant	$\frac{2\sqrt{3}}{3}$	$-\frac{2\sqrt{3}}{3}$	$\frac{2\sqrt{3}}{3}$
Cotangent	$-\sqrt{3}$	$\sqrt{3}$	$-\sqrt{3}$



$\frac{\pi}{6} = \frac{7\pi}{6}$

$\frac{\pi}{6} = \frac{7\pi}{6}$

