

1. List the names and abbreviations of the six trigonometric functions.
2. Which trigonometric functions are undefined when  $x = 0$ ?
3. How many times is  $\tan \frac{y}{x}$  undefined on the unit circle?
4. ~~Determine the exact values of the six trigonometric functions of the angle  $\theta$ .~~

**Find the point  $(x, y)$  on the unit circle that corresponds to the real number  $t$ .**

5.  $t = \frac{\pi}{3}$

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

7.  $t = -\frac{4\pi}{3}$

**Evaluate (if possible) the six trigonometric functions of the real number.**

8.  $t = \frac{3\pi}{4}$

9.  $t = \frac{5\pi}{6}$

10.  $t = \frac{\pi}{2}$



1. List the names and abbreviations of the six trigonometric functions.

Sine - sin

Cosecant - csc

Cosine - cos

Secant - sec

Tangent - tan

Cotangent - cot

2. Which trigonometric functions are undefined when  $x = 0$ ?

tan

Sec.

3. How many times is  $\tan \frac{y}{x}$  undefined on the unit circle?

2 times at  $\frac{\pi}{2}$  and  $\frac{3\pi}{2}$

- ~~4. Determine the exact values of the six trigonometric functions of the angle  $\theta$ .~~

Find the point  $(x, y)$  on the unit circle that corresponds to the real number  $t$ .

5.  $t = \frac{\pi}{3}$

$(\frac{1}{2}, \frac{\sqrt{3}}{2})$

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

$(-\frac{\sqrt{3}}{2}, -\frac{1}{2})$

7.  $t = -\frac{4\pi}{3}$

$(-\frac{1}{2}, \frac{\sqrt{3}}{2})$

Evaluate (if possible) the six trigonometric functions of the real number.

8.  $t = \frac{3\pi}{4}$

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

$\cos t = -\frac{\sqrt{2}}{2}$

$\tan t = -1$

$\csc t = \sqrt{2}$

$\sec t = -\sqrt{2}$

$\cot t = -1$

9.  $t = \frac{5\pi}{6}$

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

$\cos t = -\frac{\sqrt{3}}{2}$

$\tan t = -\frac{\sqrt{3}}{3}$

$\csc t = 2$

$\sec t = -\frac{2\sqrt{3}}{3}$

$\cot t = -\sqrt{3}$

10.  $t = \frac{\pi}{2}$

$\sin t = 1$

$\cos t = 0$

$\tan t = \text{undefined}$

$\csc t = 1$

$\sec t = \text{undefined}$

$\cot t = 0$

Use the value of the trigonometric function to evaluate the indicated functions.

11.  $\sin t = \frac{1}{3}$

a.  $\sin(-t)$

$= -\sin t$

$= -\frac{1}{3}$

b.  $\csc(-t)$

$-\csc t$

$-3$

12.  $\cos(-t) = -\frac{1}{5}$

a.  $\cos t$

$-\frac{1}{5}$

b.  $\sec(-t)$

$-5$

Complete the following chart.

13.

$\theta$	0	$\frac{\pi}{6}$	$\frac{\pi}{4}$	$\frac{\pi}{3}$	$\frac{\pi}{2}$	$\frac{2\pi}{3}$	$\frac{3\pi}{4}$	$\frac{5\pi}{6}$	$\pi$	$\frac{7\pi}{6}$	$\frac{5\pi}{4}$	$\frac{4\pi}{3}$	$\frac{3\pi}{2}$	$\frac{5\pi}{3}$	$\frac{7\pi}{4}$	$\frac{11\pi}{6}$
$\cos(\theta)$	1	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	0	$-\frac{1}{2}$	$-\frac{\sqrt{2}}{2}$	$-\frac{\sqrt{3}}{2}$	-1	$-\frac{\sqrt{3}}{2}$	$-\frac{\sqrt{2}}{2}$	$-\frac{1}{2}$	0	$\frac{1}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$
$\sin(\theta)$	0	$\frac{1}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$	1	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	0	$-\frac{1}{2}$	$-\frac{\sqrt{2}}{2}$	$-\frac{\sqrt{3}}{2}$	-1	$-\frac{\sqrt{3}}{2}$	$-\frac{\sqrt{2}}{2}$	$-\frac{1}{2}$
$\tan(\theta)$	0	$\frac{\sqrt{3}}{3}$	1	$\sqrt{3}$	-	$-\sqrt{3}$	-1	$-\frac{\sqrt{3}}{3}$	0	$\frac{\sqrt{3}}{3}$	1	$+\sqrt{3}$	-	$-\sqrt{3}$	-1	$-\frac{\sqrt{3}}{3}$