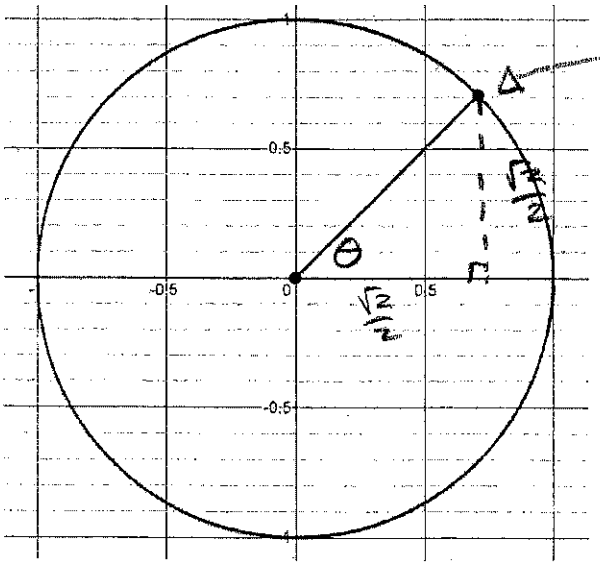
PC 5-2 The six trigonometric functions

Below is a picture of the unit circle with the coordinate $\left(\frac{\sqrt{2}}{2}, \frac{\sqrt{2}}{2}\right)$ graphed on the circumference of the circle.

X Y



The coordinate $\left(\frac{\sqrt{2}}{2}, \frac{\sqrt{2}}{2}\right)$ is on the unit circle. The angle θ associated with that coordinate is $\frac{\pi}{4}$.

$\sin(\theta) = y$

$\sin(\pi/4) = \frac{\sqrt{2}}{2}$

$\cos(\theta) = x$

$\cos(\pi/4) = \frac{\sqrt{2}}{2}$

$\tan(\theta) = \frac{y}{x}$

$\tan(\pi/4) = 1$

$\csc(\theta) = \frac{1}{y}$

$\csc(\pi/4) = \frac{2}{\sqrt{2}} \cdot \frac{\sqrt{2}}{2} = \frac{2\sqrt{2}}{2} = \sqrt{2}$

$\sec(\theta) = \frac{1}{x}$

$\sec(\pi/4) = \sqrt{2}$

$\cot(\theta) = \frac{x}{y}$

$\cot(\pi/4) = 1$