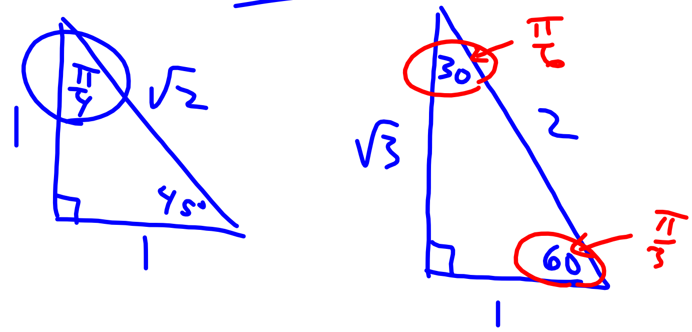
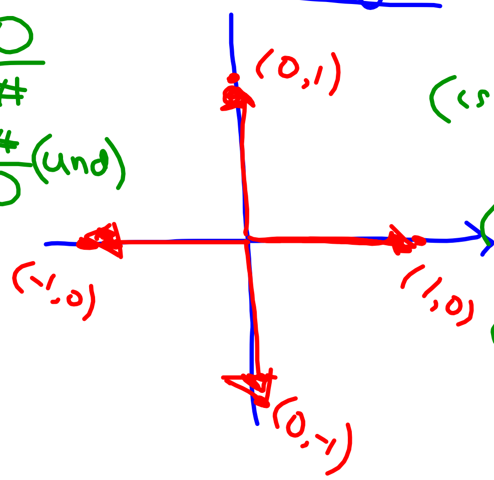
Review: Special Angles



Quadrantal Angles: Unit Circle (r = 1)

$0 = \frac{0}{\#}$

$\frac{\#}{0}$ (und)



(csc θ) $\sin\theta = \frac{y}{r}$ } $\sin\theta = y$

(sec θ) $\cos\theta = \frac{x}{r}$ } $\cos\theta = x$

(cot θ) $\tan\theta = \frac{y}{x}$

$\frac{\pi}{6} \Rightarrow \left(\frac{\sqrt{3}}{2}, \frac{1}{2}\right)$

$\frac{\pi}{3} \Rightarrow \left(\frac{1}{2}, \frac{\sqrt{3}}{2}\right)$

$\frac{\pi}{4} \Rightarrow \left(\frac{1}{\sqrt{2}}, \frac{1}{\sqrt{2}}\right)$

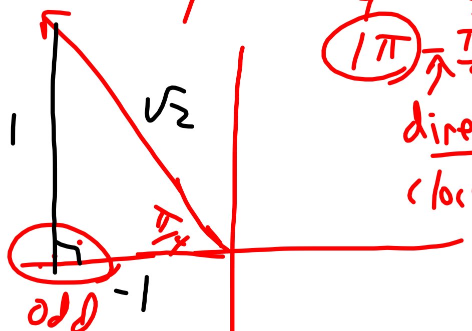
OR

Rationalized $\Rightarrow \left(\frac{\sqrt{2}}{2}, \frac{\sqrt{2}}{2}\right)$

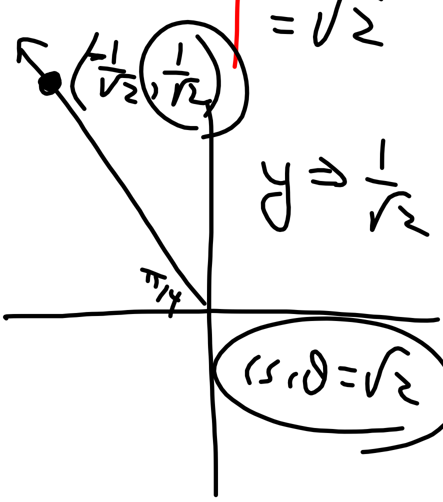
$\csc\frac{3\pi}{4} \Rightarrow \frac{4\pi}{4} - \frac{\pi}{4}$

$1\pi - \frac{\pi}{4}$

direction clockwise



$= \sqrt{2}$



$y \Rightarrow \frac{1}{\sqrt{2}}$

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

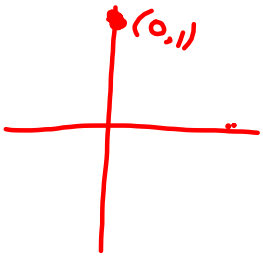
Evaluate without the use of a calculator:

$$\sin\frac{9\pi}{2} - \cos^2\left(\frac{29\pi}{6}\right)\tan\left(\frac{15\pi}{4}\right)$$

$\frac{9\pi}{2}$

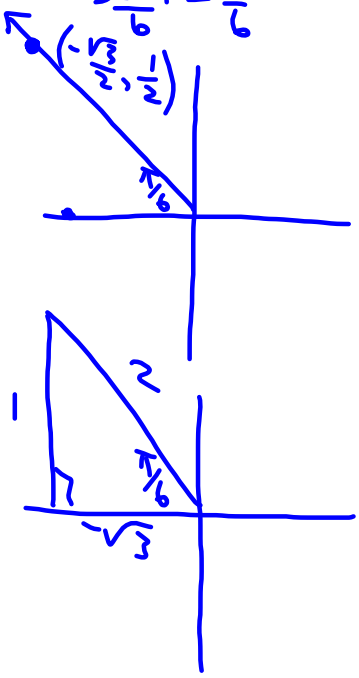
$\frac{8\pi}{2} + \frac{\pi}{2}$

$4\pi + \frac{\pi}{2}$



$\frac{29\pi}{6}$

$\frac{30\pi}{6} - \frac{\pi}{6}$

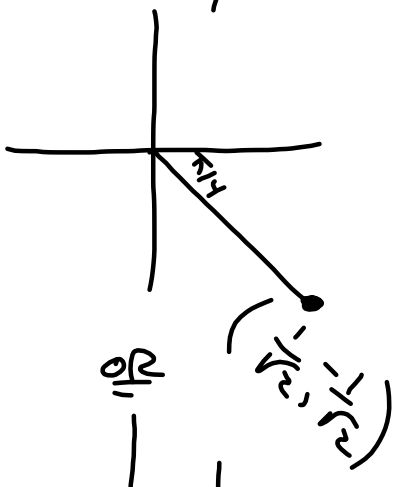


$\cos^2 40°$

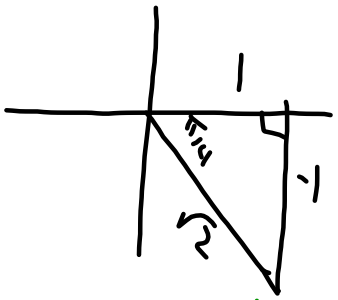
$(\cos 40°)^2$

$\frac{16\pi}{4} - \frac{\pi}{4}$

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



OR



$= (1) - \left(-\frac{\sqrt{3}}{2}\right)^2(-1)$

$= 1 - \left(\frac{3}{4}\right)(-1)$

$= \frac{1}{1} + \frac{3}{4}$

$= \frac{4}{4} + \frac{3}{4}$

$= \frac{7}{4}$

$(\sqrt{7})^2 = 7$

$\left(\frac{3}{5}\right)^2 = \frac{9}{25}$

Evaluate without the use of a calculator:

$$\cos\left(\frac{16\pi}{3}\right)\tan^2\left(\frac{23\pi}{6}\right)+\csc\left(\frac{11\pi}{2}\right)+\sin^2\left(\frac{27\pi}{4}\right)$$

$\frac{15\pi}{3}+\frac{\pi}{3}$ $\frac{24\pi}{6}-\frac{\pi}{6}$ $\frac{10\pi}{2}+\frac{\pi}{2}$ $\frac{28\pi}{4}-\frac{\pi}{4}$

$5\pi+\frac{\pi}{3}$ 4π 5π $7\pi-\frac{\pi}{4}$