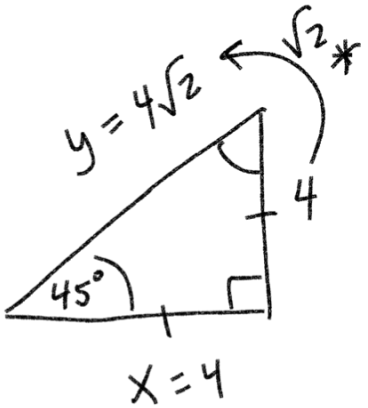
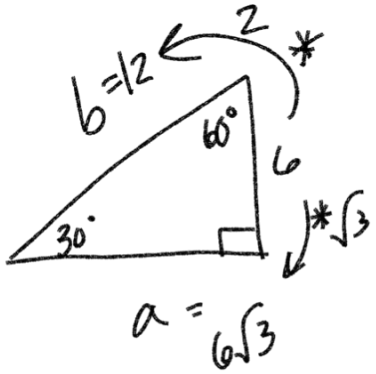
TTH-PT Pre-Calculus: Trigonometry Session 8





$4^2 + 4^2 = y^2$

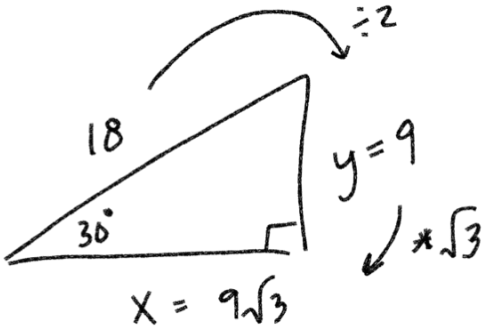
$16 + 16 = y^2$

$\sqrt{32} = \sqrt{y^2}$

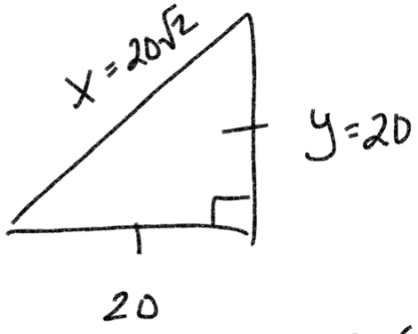
$\sqrt{16}\sqrt{2} = y$

$4\sqrt{2} = y$

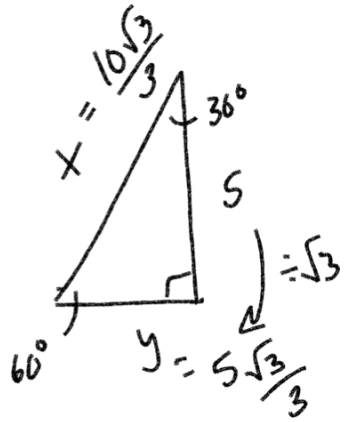
1.)



2.)



3.)



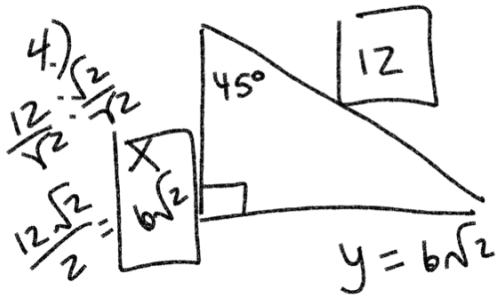
$\frac{5}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}}$

$\frac{5\sqrt{3}}{3}$

$\frac{8}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}}$

$\frac{8\sqrt{2}}{2} = 4\sqrt{2}$

4.)



$\frac{12}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}}$

$\frac{12\sqrt{2}}{2} = 6\sqrt{2}$

$\sin \frac{3\pi}{4} = \boxed{\frac{\sqrt{2}}{2}}$

if 4 $\longrightarrow \frac{\sqrt{2}}{2}$

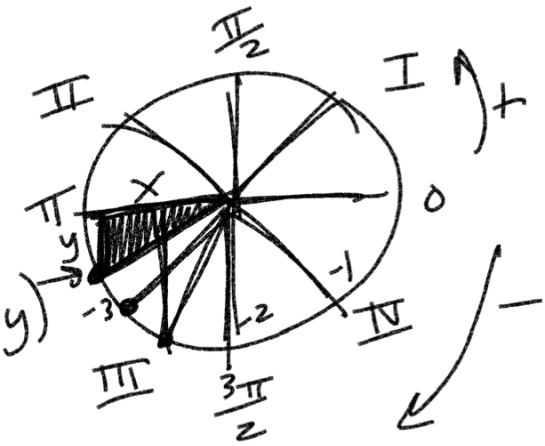
if not $\longrightarrow \frac{1}{2}, \frac{\sqrt{3}}{2}, 0, 1$

Quadrant: II

cos → x

sin → y

(cos, sin) (x, y)

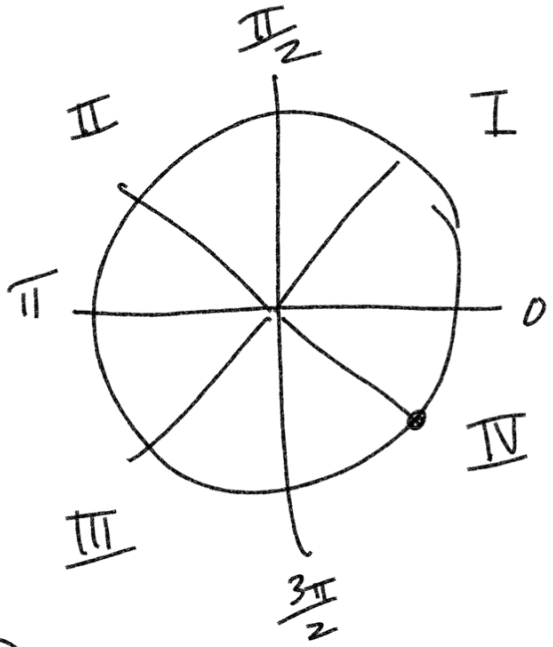


$\sin -\frac{3\pi}{4} = \boxed{\frac{-\sqrt{2}}{2}}$

Quadrant: III

$\cos \frac{7\pi}{6} = \boxed{\frac{-\sqrt{3}}{2}}$ long

Quadrant: III



$\tan \frac{7\pi}{4} = \frac{\sin \frac{7\pi}{4}}{\cos \frac{7\pi}{4}} = \frac{\frac{-\sqrt{2}}{2}}{\frac{\sqrt{2}}{2}}$

Keep, change, flip

$-\frac{\sqrt{2}}{2} \div \frac{\sqrt{2}}{2}$

$-\frac{\sqrt{2}}{2} * \frac{2}{\sqrt{2}} = -1$

$\tan \frac{7\pi}{4} = \boxed{-1}$

$$\tan \frac{\pi}{3} = \frac{\sin \frac{\pi}{3}}{\cos \frac{\pi}{3}} = \frac{\frac{\sqrt{3}}{2}}{\frac{1}{2}} = \frac{\sqrt{3}}{1} = \sqrt{3}$$

$\frac{\sqrt{3}}{2} \div \frac{1}{2}$

$\frac{\sqrt{3}}{2} * \frac{2}{1} = \frac{\sqrt{3}}{1} = \sqrt{3}$

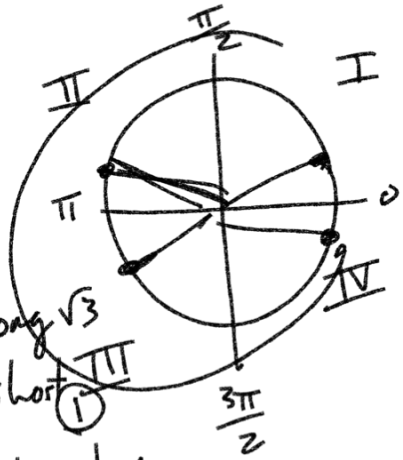
$\cot \frac{\pi}{3} = \frac{1 \cdot \sqrt{3}}{\sqrt{3} \cdot \sqrt{3}}$ $\boxed{\frac{\sqrt{3}}{3}}$

$\frac{\pi}{3} * \frac{180}{\pi} = \frac{180}{3} = 60$

$$\csc \frac{11\pi}{6} = \frac{1}{\sin \frac{11\pi}{6}} = \frac{1}{-\frac{1}{2}}$$

$1 \div -\frac{1}{2}$

$1 * \frac{-2}{1} = -2$



on 6 x → long $\sqrt{3}$
y → short 1

on 3 x → short 1
y → long $\sqrt{3}$