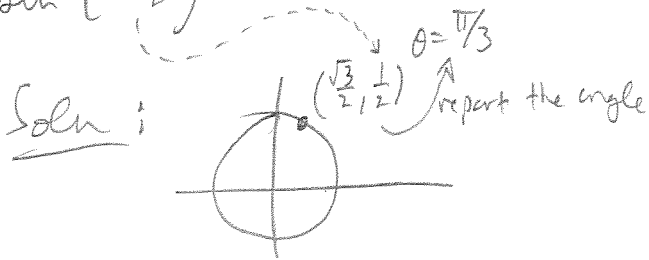
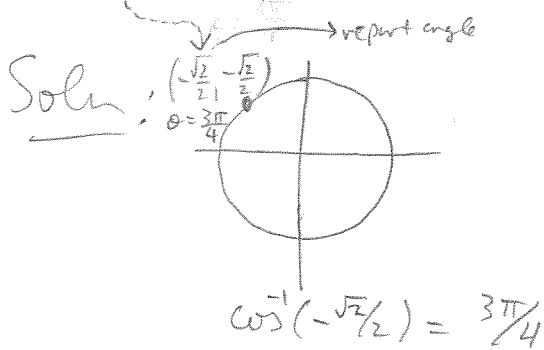


#9) $\sin^{-1}\left(-\frac{1}{2}\right)$ find y-coord $\frac{1}{2}$



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

#11) $\cos^{-1}\left(-\frac{\sqrt{2}}{2}\right)$ find x-coord $-\frac{\sqrt{2}}{2}$

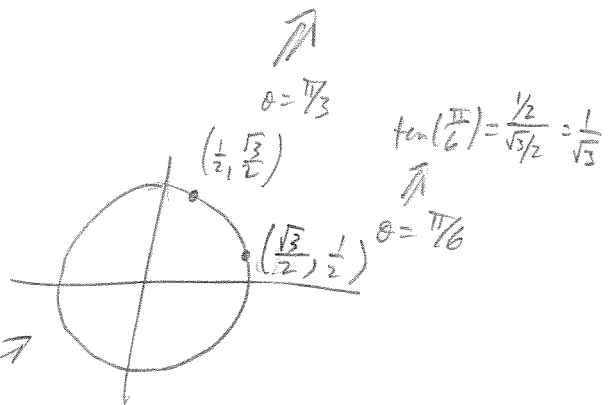


$$\cos^{-1}\left(-\frac{\sqrt{2}}{2}\right) = \frac{3\pi}{4}$$

$$\tan\left(\frac{\pi}{3}\right) = \frac{\sqrt{3}/2}{1/2} = \sqrt{3}$$

#15) $\tan^{-1}(\sqrt{3})$

Soln: Consider some options...
must report angle whose tangent is exactly $\sqrt{3}$...



We observe from the picture that

$$\tan^{-1}(\sqrt{3}) = \frac{\pi}{3}$$

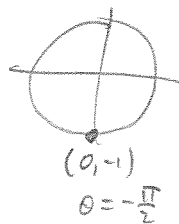
#18) Using calculator,

$$\arcsin(0.23) \approx 0.2320 \text{ radians}$$

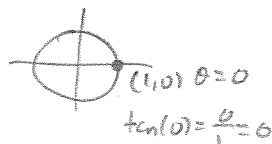
$$\approx 13.3^\circ$$

2

$$\#24) \sin^{-1}(\cos(\pi)) = \sin^{-1}(-1) = -\frac{\pi}{2}$$

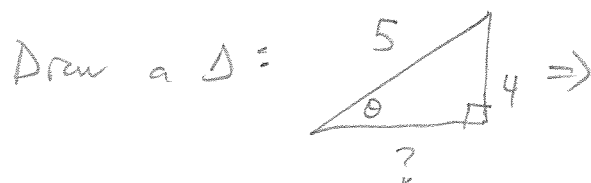


$$\#25) \tan^{-1}(\sin(\pi)) = \tan^{-1}(0) = 0$$



$$\#32) \cos(\sin^{-1}(\frac{4}{5}))$$

Soln: Let $\theta = \sin^{-1}(\frac{4}{5})$ so $\sin(\theta) = \frac{4}{5}$.



Pythagorean thm

$$?^2 + 4^2 = 5^2$$

$$?^2 = 25 - 16$$

$$? = \sqrt{9} = 3$$

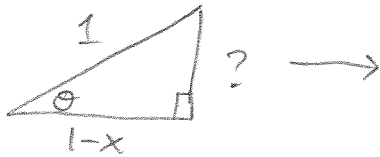
$$\begin{aligned} \Rightarrow \cos(\sin^{-1}(\frac{4}{5})) &= \cos(\theta) \\ &= \frac{3}{5} \end{aligned}$$

#38] $\sin(\cos^{-1}(1-x))$

3

Soln: Let $\theta = \cos^{-1}(1-x)$, so $\cos(\theta) = 1-x$.

Draw a Δ :



Pythagorean thm says

$$(1-x)^2 + ?^2 = 1$$

$$? = \sqrt{1 - (1-x)^2}$$

$$= \sqrt{1 - (1 - 2x + x^2)}$$

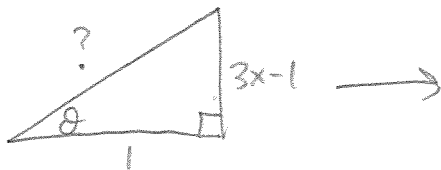
$$= \sqrt{2x - x^2}$$

Therefore,

$$\begin{aligned} \sin(\cos^{-1}(1-x)) &= \sin(\theta) \\ &= \frac{\sqrt{2x - x^2}}{1} \end{aligned}$$

#40] $\cos(\tan^{-1}(3x-1))$

Soln: Let $\theta = \tan^{-1}(3x-1)$ so $\tan(\theta) = 3x-1$. Draw a Δ :



Pythagorean thm says

$$1^2 + (3x-1)^2 = ?^2$$

$$\sqrt{1 + 9x^2 - 6x + 1} = ?$$

$$\sqrt{9x^2 - 6x + 2} = ?$$

Therefore,

$$\begin{aligned} \cos(\tan^{-1}(3x-1)) &= \cos(\theta) \\ &= \frac{1}{\sqrt{9x^2 - 6x + 2}} \end{aligned}$$