

28)  $\cos\left(\sin^{-1}\frac{\sqrt{2}}{3}\right)$  Let  $\theta = \sin^{-1}\frac{\sqrt{2}}{3}$  → convert to  $\cos^{-1}\theta$

then  $\sin\theta = \frac{\sqrt{2}}{3}$  and  $y = \sqrt{2}$  &  $r = 3$   
 $\therefore x = \sqrt{7}$

$\cos\theta = \frac{\sqrt{7}}{3}$

so  $\theta = \cos^{-1}\left(\frac{\sqrt{7}}{3}\right)$

and

$\cos\left(\cos^{-1}\left(\frac{\sqrt{7}}{3}\right)\right) = \frac{\sqrt{7}}{3}$

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$\sin(\cos^{-1}u)$

$\theta = \cos^{-1}u$

$\cos\theta = u$

$x = u$  &  $r = 1$

$\sin\theta = \sqrt{1-u^2}$

$y = \sqrt{1-u^2}$

$\theta = \sin^{-1}\sqrt{1-u^2}$

$\sin\left[\sin^{-1}\left(\sqrt{1-u^2}\right)\right] = \sqrt{1-u^2}$

p. 457 (9-66) 3rd + 453 (70 & 78)

$$25) \tan\left(\sin^{-1}\frac{1}{3}\right) \rightarrow \text{try to get } \tan^{-1}\theta$$

$$\theta = \sin^{-1}\frac{1}{3} \Rightarrow \sin\theta = \frac{1}{3}$$

$$\text{if } \sin\theta = \frac{1}{3} \text{ then } y=1 \text{ \& } r=3$$

$$\therefore \text{and } x = 2\sqrt{2}$$

$$\tan\theta = \frac{1}{2\sqrt{2}} = \frac{\sqrt{2}}{4}$$

$$\theta = \tan^{-1}\left(\frac{\sqrt{2}}{4}\right)$$

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

$$26) \tan\left(\cos^{-1}\frac{1}{3}\right) \rightarrow \text{convert to } \tan^{-1}\theta$$

$$\text{Let } \theta = \cos^{-1}\left(\frac{1}{3}\right) \text{ then } x=1 \text{ } r=3$$

$$\text{and } y = 2\sqrt{2}$$

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

$$\theta = \tan^{-1}(2\sqrt{2})$$

$$\text{So: } \tan\left(\tan^{-1}(2\sqrt{2})\right) = 2\sqrt{2}$$

$$32) \cot \left[ \cos^{-1} \left( -\frac{\sqrt{3}}{3} \right) \right] \quad \text{Let } \theta = \cos^{-1} \left( -\frac{\sqrt{3}}{3} \right)$$

$$\cot \theta = \frac{-\sqrt{3}}{\sqrt{6}}$$

$$\cot \theta = \frac{-\sqrt{3}}{\sqrt{6}} = -\frac{\sqrt{1}}{\sqrt{2}}$$

$$\cot \theta = -\frac{\sqrt{2}}{2} \quad \theta = \cot^{-1} \left( -\frac{\sqrt{2}}{2} \right) \quad y = \sqrt{6}$$

$$\cot \left[ \cot^{-1} \left( -\frac{\sqrt{2}}{2} \right) \right] = -\frac{\sqrt{2}}{2}$$

$$\cos \theta = \frac{-\sqrt{3}}{3} = \frac{x}{r}$$

$$x = -\sqrt{3} \quad r = 3$$

$$3^2 - 3 = y^2$$

$$9 - 3 = y^2$$

$$6 = y^2$$

$$y = \sqrt{6}$$

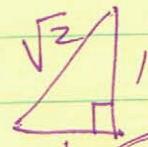
$$40) \csc^{-1} \sqrt{2}$$

$$\text{Let } \theta = \csc^{-1} \sqrt{2}$$

$$\text{so } \csc \theta = \sqrt{2} = \frac{r}{y}$$

$$r = \sqrt{2} \quad y = 1$$

$$x = 1$$



$$\theta = 45^\circ = \frac{\pi}{4}$$