

White-board Review of
Inverse Trig. Functions &
Composition of a Trig. Functions.

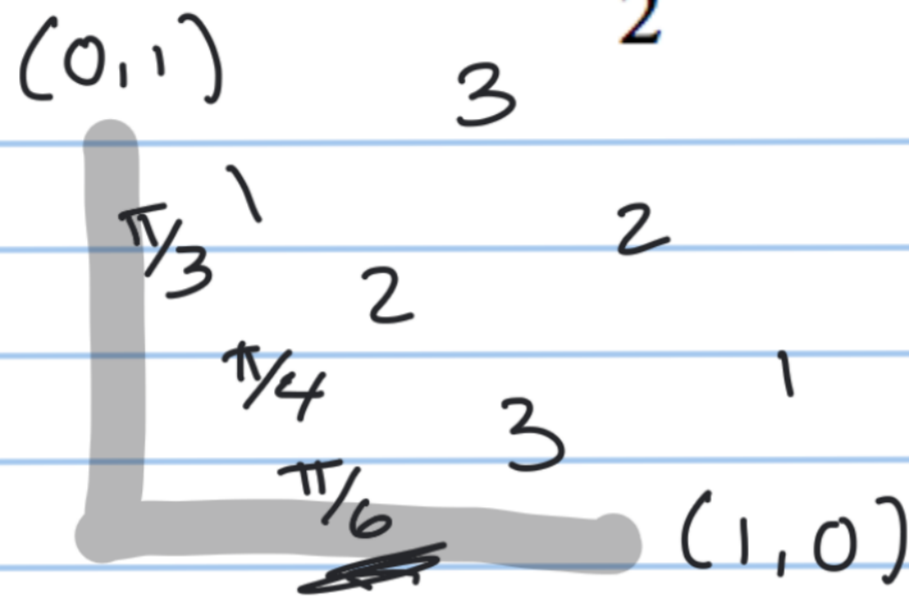
1 Example

Find the **EXACT** value of the following

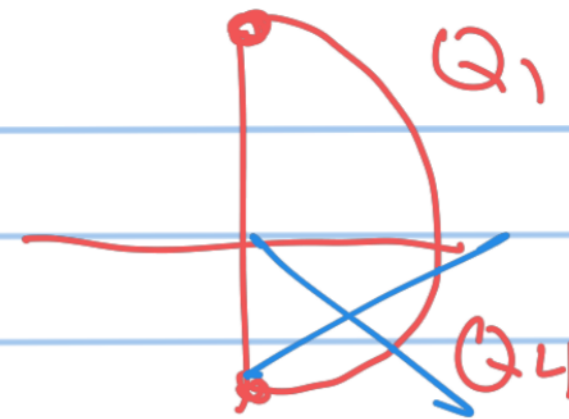
a) $\sin^{-1} \frac{\sqrt{3}}{2} = \frac{\pi}{3}$

b) $\cos^{-1} \frac{\sqrt{3}}{2} = \frac{\pi}{6}$

c) $\tan^{-1} \frac{\sqrt{3}}{3} = \frac{\pi}{6}$



S	A
T	C



Handwritten calculations and scribbles for problem c):

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

$\frac{1}{\sqrt{3}} = \frac{1}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{\sqrt{3}}{3}$

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

Other scribbles include $\frac{\sqrt{3}}{2}$ and $\frac{1}{\sqrt{3}}$.

2 Example

Find the **EXACT** value of the following

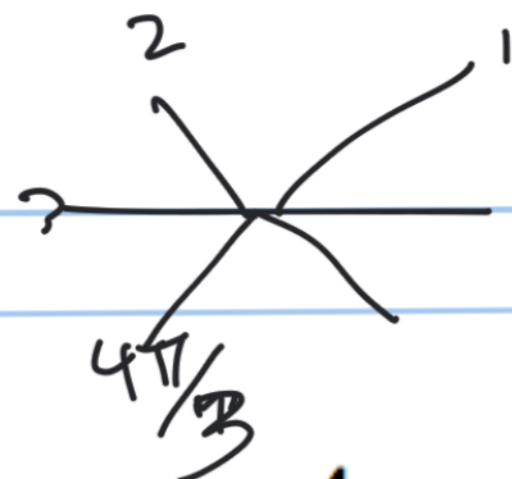
$$\text{d) } \cos^{-1}\left(-\frac{\sqrt{3}}{2}\right) = \frac{5\pi}{6}$$

$$\text{e) } \sin^{-1}\left(-\frac{\sqrt{2}}{2}\right) = \frac{-\pi}{4}$$

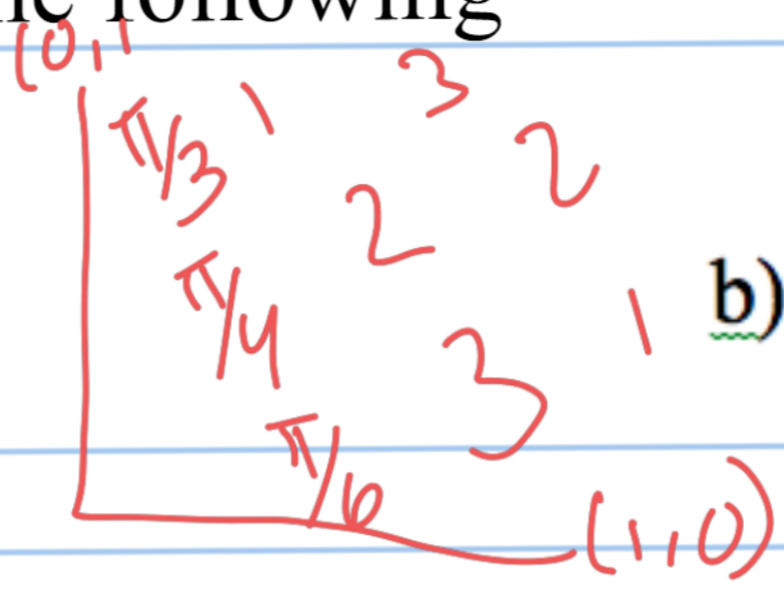
$$\text{f) } \tan^{-1}(-\sqrt{3}) = \frac{-\pi}{3}$$

3 Example

Find the **EXACT** value of the following



a) $\text{Sin}^{-1}(\sin(\frac{\pi}{3})) = \underline{\hspace{2cm}}$



b) $\text{Cos}^{-1}(\cos(\frac{4\pi}{3})) = \underline{-\frac{2\pi}{3}}$

$\text{Sin}^{-1}(\frac{\sqrt{3}}{2})$



$\frac{\pi}{3}$

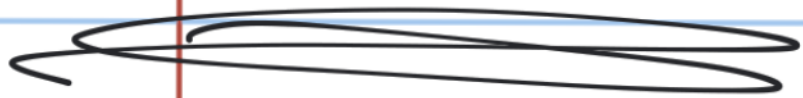


$\text{Cos}^{-1}(-\frac{1}{2})$

4 Example

Find the **EXACT** value of the following

c) $\text{Sin}^{-1}\left(\sin\left(\frac{4\pi}{3}\right)\right) = -\frac{\pi}{3}$



d) $\text{Cos}^{-1}\left(\sin\left(\frac{5\pi}{6}\right)\right) = -\frac{\pi}{3}$

5 Example

Find the **EXACT** value of the following

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

$$h) \cos^{-1}\left(\cos\left(\frac{19\pi}{6}\right)\right) = \frac{5\pi}{6}$$

5 Example

Find the **EXACT** value of the following

i) $\text{Cos}^{-1}(\cos(-\frac{\pi}{3})) = \underline{\hspace{2cm}}$

j) $\text{Tan}^{-1}(\tan(\frac{-5\pi}{4})) = \underline{\hspace{2cm}}$

5 Example

Find the **EXACT** value of the following

a) $\cos(\text{Sin}^{-1} - \frac{\sqrt{3}}{2}) = \underline{\hspace{2cm}}$

b) $\cot(\text{Cos}^{-1}(-\frac{\sqrt{3}}{2})) = \underline{\hspace{2cm}}$

5 Example

Find the **EXACT** value of the following

c) $\sec(\text{Tan}^{-1}(-\frac{\sqrt{3}}{3})) = \underline{\hspace{2cm}}$

d) $\cos(\text{Cos}^{-1}(-\frac{1}{2})) = \underline{\hspace{2cm}}$

Sohcah Toa

6 Example

Find the **EXACT** value of the following

a) $\cos(\text{Sin}^{-1}(-\frac{3}{5})) = \underline{\hspace{2cm}}$

b) $\cot(\text{Cos}^{-1}(-\frac{2}{3})) = \underline{\hspace{2cm}}$