

Section 4.7: Inverse trig Functions.

Inverse $\sin^{-1}$ $\cos^{-1}$ $\tan^{-1}$

- use inverse trig to find the angle.

~~$\sin^{-1} = \frac{1}{\sin} = \csc$~~

{ -1 is not an exponent }

$$\left. \begin{array}{l} \frac{1}{\sin} = \csc \\ \frac{1}{\cos} = \sec \\ \frac{1}{\tan} = \cot \end{array} \right\} \text{Reciprocal functions}$$

- Inverse Functions $\rightarrow$ switching the x and the y.

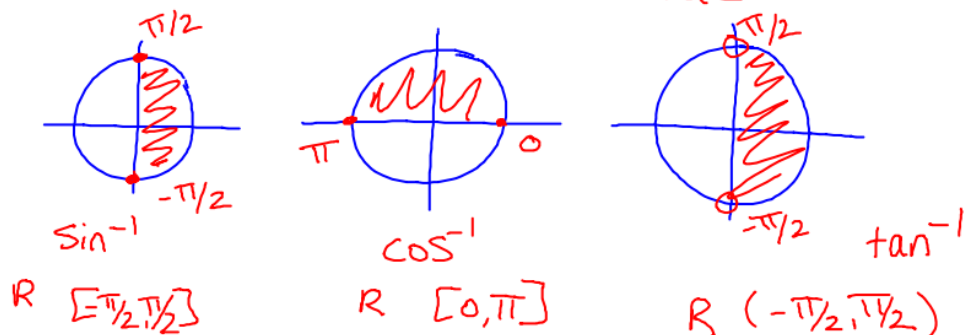


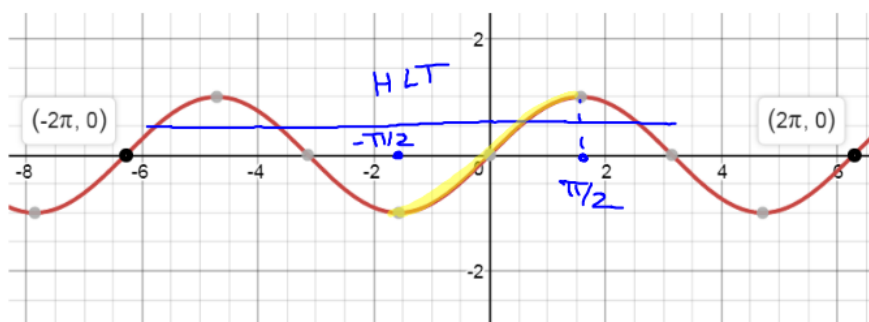
$$D \rightleftharpoons R$$

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$$\sin^{-1}(0.362) \approx \underline{21^\circ} \text{ degrees.}$$

$$\#17 \quad \tan^{-1}(2.37) = \underline{1.17} \text{ rad.}$$





Evaluate trig functions without a calc.

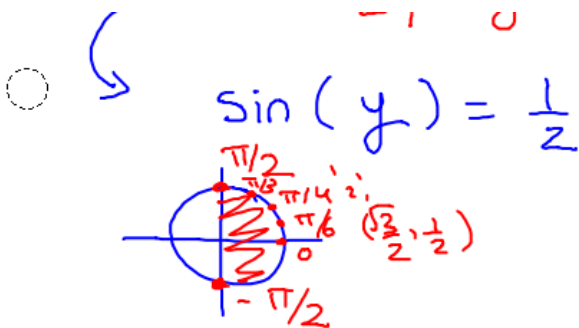
Ex 1: Find $\sin^{-1}(\frac{1}{2})$

which angle has a $\sin = \frac{1}{2}$
(y coordinate)

- Switch the x and the y.

- $\sin^{-1}(x) = y$

✓ $\sin^{-1}(\frac{1}{2}) = y$



$$x = \frac{\pi}{6}$$

Ex 2 Find $\cos^{-1}(-1)$

$$\cos^{-1}(-1) = y$$

$$\cos(y) = -1$$

$$x = \pi$$

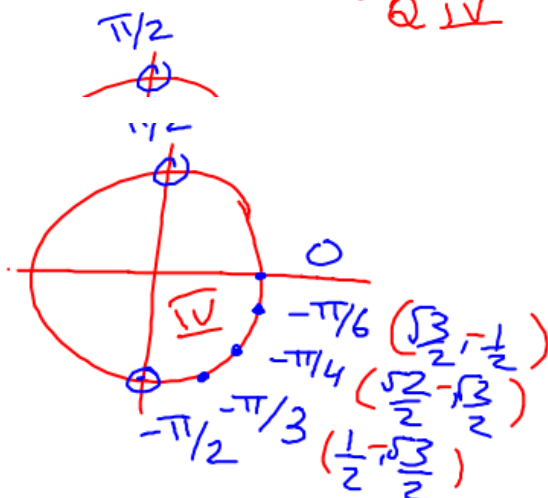
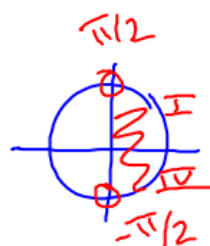


Ex 3 : Find $\tan^{-1}(-\sqrt{3})$

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

$$\tan(y) = -\sqrt{3}$$

Q IV



$$\tan = \frac{\sin}{\cos}$$

$$x = -\frac{\pi}{3}$$

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