

## Inverse Trig Functions

1.15.16

Lesson 8

Section 6.8

Warm-up

Solve:

1)  $\cos \frac{\pi}{2} =$

2)  $\sin 30^\circ =$

3)  $\tan \frac{\pi}{4} =$

Function	Domain	Range
$y = \sin x$	$-\frac{\pi}{2} \leq x \leq \frac{\pi}{2}$	$-1 \leq y \leq 1$
$y = \arcsin x$	$-1 \leq x \leq 1$	$-\frac{\pi}{2} \leq y \leq \frac{\pi}{2}$
$y = \cos x$	$0 \leq x \leq \pi$	$-1 \leq y \leq 1$
$y = \arccos x$	$-1 \leq x \leq 1$	$0 \leq y \leq \pi$
$y = \tan x$	$-\frac{\pi}{2} < x < \frac{\pi}{2}$	all real numbers
$y = \arctan$	all real numbers	$-\frac{\pi}{2} < y < \frac{\pi}{2}$

I do:

$$\arcsin\left(-\frac{\sqrt{2}}{2}\right) =$$

Use Unit Circle to find $-\frac{\sqrt{2}}{2}$	
Narrow down choices with $\sin = y$	
Narrow farther with Range restrictions	

We do:

$$\cos^{-1}\left(-\frac{1}{2}\right)$$

Use Unit Circle to find $-\frac{1}{2}$	
Narrow down choices with $\cos = x$	
Narrow farther with Range restrictions	

We do:

$$\sin(\tan^{-1}1 - \sin^{-1}1)$$

Simplify the individual parts	$\tan^{-1} =$
	$\sin^{-1} =$
Simplify	$\sin ( \quad )$

You do with your partners on whiteboards

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

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

Exit Slip

Simplify, SHOW ALL THE STEPS

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