



**Precalculus A**

**4.7 Inverse Trigonometric Functions**

**Day Two**

**Homework: 4.7 HW #3**

*D. Paulson*

In exercises 1-12, find the exact value.

1.  $\sin^{-1}\left(\frac{\sqrt{3}}{2}\right)$

Q1



$\sin^{-1}\left(\frac{\sqrt{3}}{2}\right) = 60^\circ$

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

Q4



$\sin^{-1}\left(-\frac{1}{2}\right) = -30^\circ$

3.  $\tan^{-1}(0)$



$\tan^{-1}(0) = 0^\circ$

4.  $\cos^{-1}(0)$



$\cos^{-1}(0) = 90^\circ$

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

Q1



$\cos^{-1}\left(\frac{1}{2}\right) = 60^\circ$

6.  $\tan^{-1}(1)$

Q1



$\tan^{-1}(1) = 45^\circ$

7.  $\tan^{-1}(-1)$

Q4



$\tan^{-1}(-1) = -45^\circ$

8.  $\cos^{-1}\left(-\frac{\sqrt{3}}{2}\right)$

Q2



$\cos^{-1}\left(-\frac{\sqrt{3}}{2}\right) = 150^\circ$

9.  $\sin^{-1}\left(-\frac{\sqrt{2}}{2}\right)$

Q4



$\sin^{-1}\left(-\frac{\sqrt{2}}{2}\right) = -45^\circ$

10.  $\tan^{-1}(-\sqrt{3})$

Q4



$\tan^{-1}(-\sqrt{3}) = -60^\circ$

11.  $\cos^{-1}(0)$



$\cos^{-1}(0) = 90^\circ$

12.  $\sin^{-1}(1)$



$\sin^{-1}(1) = 90^\circ$

In exercises 13-16, use a calculator to find the approximate value. Express your answers in degrees to the nearest degree.

13.  $\sin^{-1}(0.362)$   $21^\circ$

14.  $\sin^{-1}(0.67)$   $42^\circ$

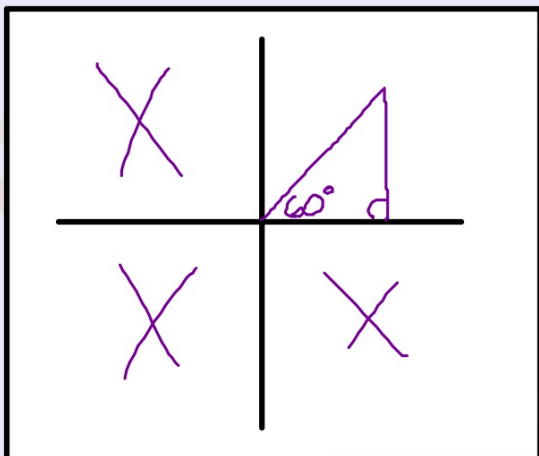
15.  $\tan^{-1}(-12.5)$   $-85^\circ$

16.  $\cos^{-1}(-0.23)$   $103^\circ$

Find the exact value

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

Restriction: I, IV  
to

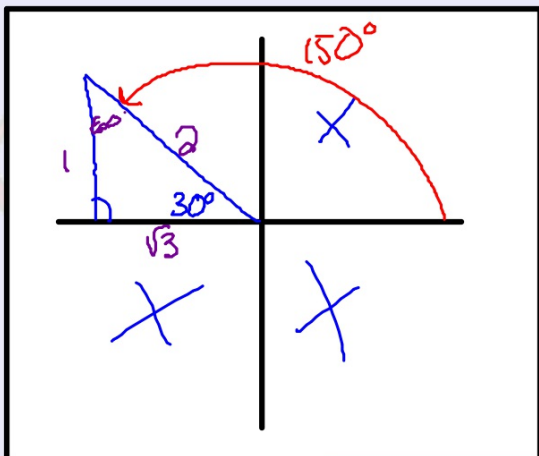


$$\cos 60^\circ = \frac{1}{2}$$

Find the exact value

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

Restriction: I, II

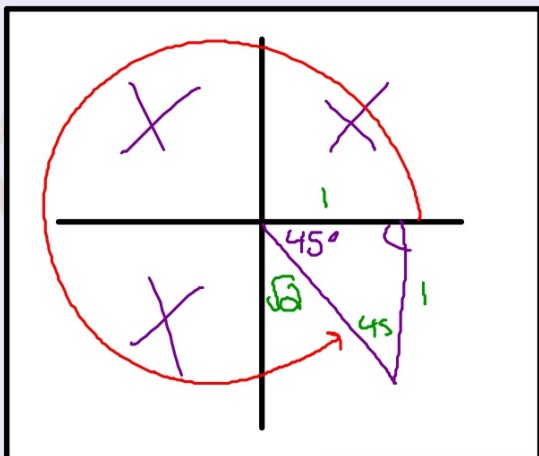


$$\cot 150^\circ = \frac{-3}{\sqrt{3}} = -\frac{3\sqrt{3}}{3} = -\sqrt{3}$$
$$\tan 150^\circ = -\frac{\sqrt{3}}{3}$$

Find the exact value

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

Restriction:  $I, IV$

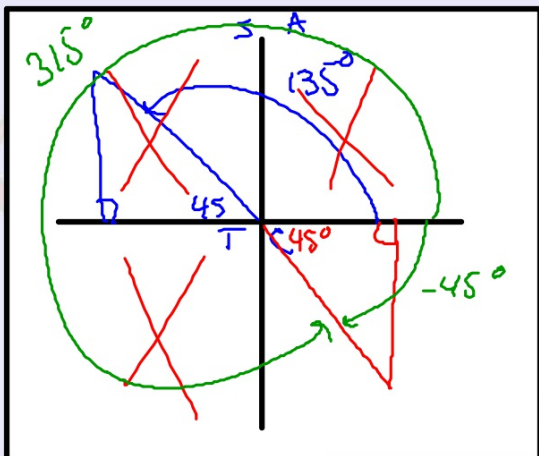


$$\csc 315^\circ = -\frac{2}{\sqrt{2}} = -\frac{2\sqrt{2}}{2} = -\sqrt{2}$$
$$\sin 315^\circ = -\frac{\sqrt{2}}{2}$$

Find the exact value

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

Restriction: I, IV



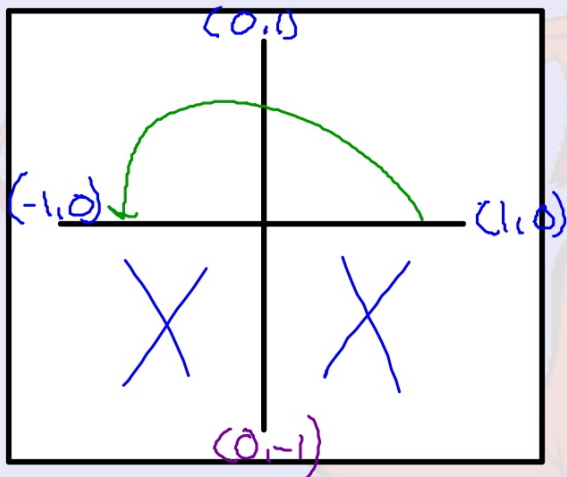
$$\cos 135^\circ = -\frac{\sqrt{2}}{2}$$

$$\sin^{-1}\left(-\frac{\sqrt{2}}{2}\right) = 315^\circ \text{ or } -45^\circ$$

Find the exact value

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

Restriction: I, II



$$\cos^{-1}(-1) = \boxed{180^\circ}$$