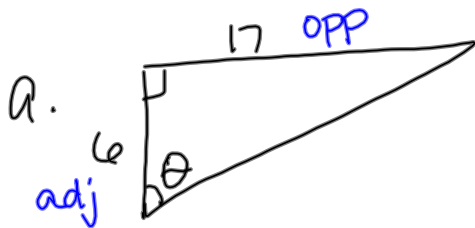


Sec. 9.4 Evaluate Inverse Trigonometric Functions

Find the measure of the angle θ .



$$\tan \theta = \frac{\text{opp}}{\text{hyp}}$$

$$\tan \theta = \frac{17}{6}$$

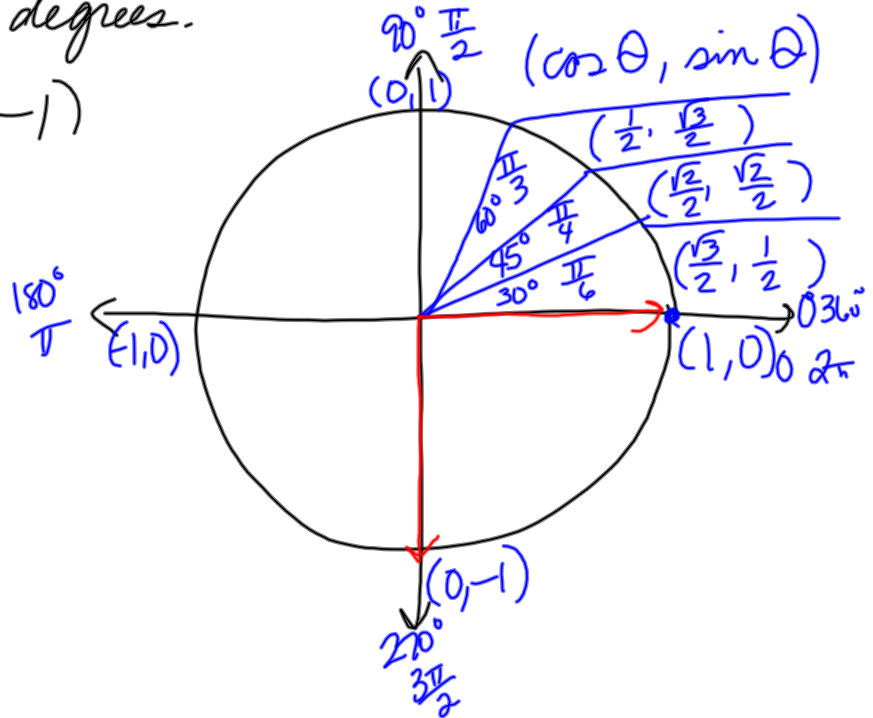
$$\tan^{-1}(\tan \theta) = \tan^{-1}\left(\frac{17}{6}\right)$$

$$\theta = \tan^{-1}\left(\frac{17}{6}\right)$$

$$\theta = 70.6^\circ$$

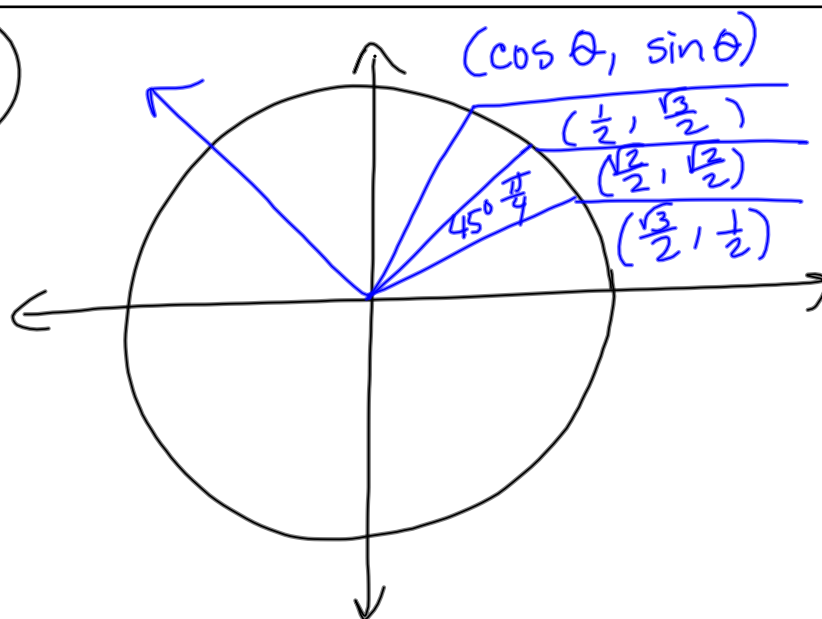
Evaluate the expression without using a calculator. Give your answer in both radians and degrees.

a. $\sin^{-1}(-1)$
 -90° or $-\frac{\pi}{2}$



Note:	If	then	
Inverse sine $\theta = \sin^{-1} a$	$-1 \leq a \leq 1$	$-\frac{\pi}{2} \leq \theta \leq \frac{\pi}{2}$ $-90^\circ \leq \theta \leq 90^\circ$	
Inverse cosine $\theta = \cos^{-1} a$	$-1 \leq a \leq 1$	$0 \leq \theta \leq \pi$ $0^\circ \leq \theta \leq 180^\circ$	
Inverse tangent $\theta = \tan^{-1} a$	$a \rightarrow$ any real number	$-\frac{\pi}{2} < \theta < \frac{\pi}{2}$ $-90^\circ < \theta < 90^\circ$	

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



$$c. \tan^{-1} \frac{\sqrt{3}}{3}$$

$$30^\circ \text{ or } \frac{\pi}{6}$$

$$d. \sin^{-1} \frac{\sqrt{2}}{2}$$

$$45^\circ \text{ or } \frac{\pi}{4}$$

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

$$-45^\circ \text{ or } -\frac{\pi}{4}$$