

Lesson 2.2.2

Saturday, February 4, 2017 4:35 PM

Reminder:

	A	S	T	C
	I	II	III	IV
sin	+	+	-	-
cos	+	-	-	+
tan	+	-	+	-

$$45^\circ:$$

$$\sin 45^\circ = \frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2}$$

$$\cos 45^\circ = \frac{1}{\sqrt{2}}$$

$$\tan 45^\circ = 1$$

$$30^\circ:$$

$$\sin 30^\circ = \frac{1}{2}$$

$$\cos 30^\circ = \frac{\sqrt{3}}{2}$$

$$\tan 30^\circ = \frac{\sqrt{3}}{3} = \frac{1}{\sqrt{3}}$$

$$60^\circ:$$

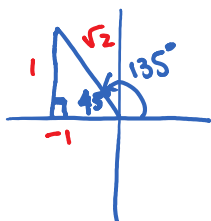
$$\sin 60^\circ = \frac{\sqrt{3}}{2}$$

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

$$\tan 60^\circ = \sqrt{3}$$

Example 1: Find the exact value for $\sin \theta$ and $\cos \theta$ where:

a. $\theta = 135^\circ$

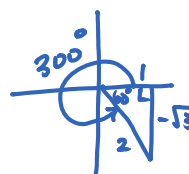


$$\theta_R = 45^\circ$$

$$\sin 135^\circ = \frac{1}{\sqrt{2}}$$

$$\cos 135^\circ = -\frac{1}{\sqrt{2}}$$

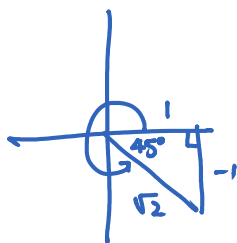
b. $\theta = 300^\circ$



$$\sin 300^\circ = -\frac{\sqrt{3}}{2}$$

$$\cos 300^\circ = \frac{1}{2}$$

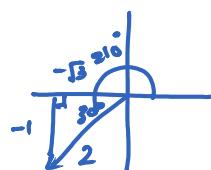
c. $\theta = 315^\circ$



$$\sin 315^\circ = -\frac{1}{\sqrt{2}}$$

$$\cos 315^\circ = \frac{1}{\sqrt{2}}$$

d. $\theta = 210^\circ$



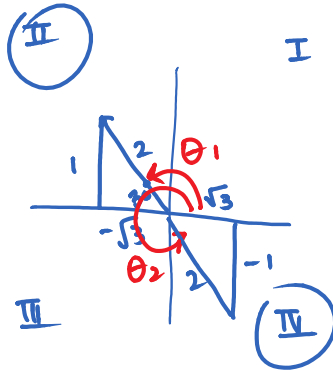
$$\sin 210^\circ = -\frac{1}{2}$$

$$\cos 210^\circ = -\frac{\sqrt{3}}{2}$$

Example 2: Find the exact value of θ where $0^\circ \leq \theta < 360^\circ$ for:

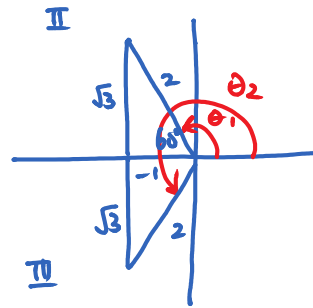
a. $\tan \theta = \frac{-1}{\sqrt{3}}$ *opp*
adj

b. $\cos \theta = \frac{-1}{2} \Rightarrow \theta_R = 60^\circ$



$\theta_1 = 180 - 30 = 150^\circ$

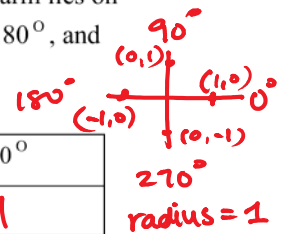
$\theta_2 = 360 - 30 = 330^\circ$



$\theta_1 = 180 - 60 = 120^\circ$

$\theta_2 = 180 + 60 = 240^\circ$

Example 3: A **quadrantal angle** is an angle in standard position whose terminal arm lies on one of the axes. Determine $\sin \theta$, $\cos \theta$, $\tan \theta$ for quadrantal angles of 0° , 90° , 180° , and 270° .



	0°	90°	180°	270°
$\sin \theta$	0	1	0	-1
$\cos \theta$	1	0	-1	0
$\tan \theta$	0	undefined	0	undefined

Assignment: pg. 96 #2, 9, 10, 14-16, 18, 19, 24, 29

