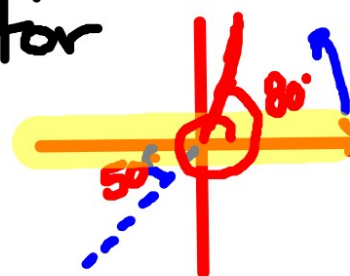


DRILL

① Find the reference angle for each angle below:



↓

a) $\frac{5\pi}{3} \rightarrow \frac{\pi}{3}$

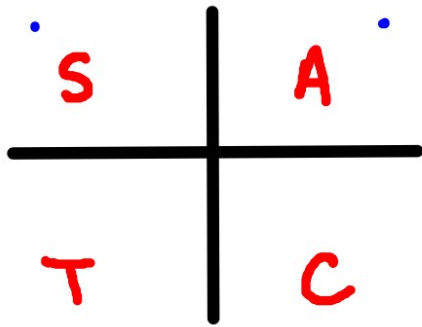
d) $230^\circ \rightarrow 50^\circ$

b) $-\frac{11\pi}{4} \rightarrow \frac{\pi}{4}$

e) $440^\circ \rightarrow 80^\circ$

c) $\frac{23\pi}{6} \rightarrow \frac{\pi}{6}$

f) $-330^\circ \rightarrow 30^\circ$



$\sin \theta \Rightarrow y\text{-coordinate}$

$\cos \theta \Rightarrow x\text{-coordinate}$

$$\tan \theta \Rightarrow \frac{\sin \theta}{\cos \theta} = \frac{y}{x}$$

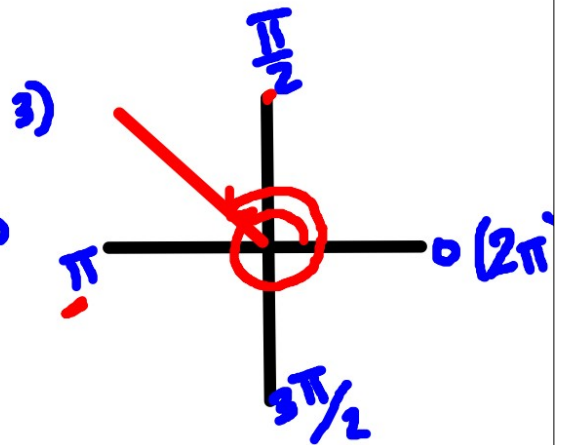
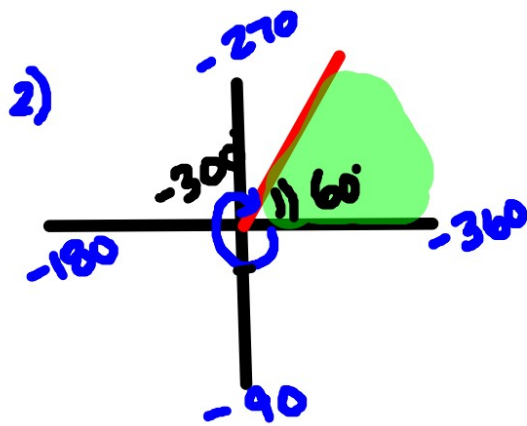
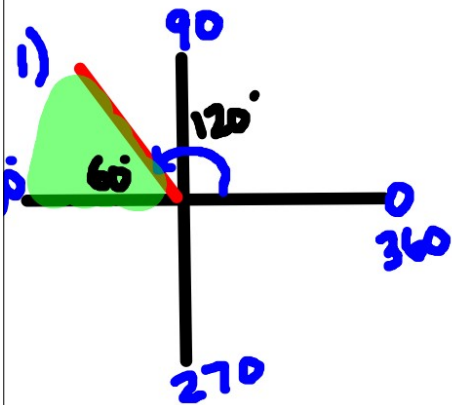
θ	0° 0	30° $\frac{\pi}{6}$	45° $\frac{\pi}{4}$	60° $\frac{\pi}{3}$	90° $\frac{\pi}{2}$
$\sin \theta$	0	$\frac{1}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$	1
$\cos \theta$	1	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	0
$\tan \theta$	0	$\frac{\sqrt{3}}{3}$	1	$\sqrt{3}$	undefined

Find:

1) $\sin 120^\circ = \sin 60^\circ = \frac{\sqrt{3}}{2}$

2) $\cos -300^\circ = \cos 60^\circ = \frac{1}{2}$

3) $\tan \frac{11\pi}{4} = -\tan \frac{\pi}{4} = -1$



Examples:

Quad, ref θ
+/-

$$1) \cos -135^\circ = -\cos 45^\circ = -\frac{\sqrt{2}}{2}$$

$$2) \tan 480^\circ = -\tan 60^\circ = -\sqrt{3}$$

$$3) \sin -\frac{7\pi}{3} = -\sin \frac{\pi}{3} = -\frac{\sqrt{3}}{2}$$

$$4) \cos \frac{15\pi}{4} = \cos \frac{\pi}{4} = \frac{\sqrt{2}}{2}$$