

**REVIEW**

**Draw a reference triangle and find the EXACT RATIO of the trig function indicated.**

1.  $\sec \theta = \frac{3}{-2}$

$x^2 + y^2 = r^2$   
 $(-2)^2 + (-\sqrt{5})^2 = r^2$   
 $4 + 5 = r^2$   
 $9 = r^2$   
 $\pm 3 = r$

2.  $\sin \theta$  for  $(-4, 6)$

$x^2 + y^2 = r^2$   
 $(-4)^2 + (6)^2 = r^2$   
 $16 + 36 = r^2$   
 $52 = r^2$   
 $\pm \sqrt{52} = r$   
 $2\sqrt{13} = r$

$\sin \theta = \frac{6}{2\sqrt{13}}$   
 $= \frac{3}{\sqrt{13}}$   
 $\sin \theta = \frac{3\sqrt{13}}{13}$

3. Given  $\csc \theta = \frac{25}{7}$  where  $\frac{\pi}{2} < \theta < \pi$ . Find  $\tan \theta$ .

Pythagorean Triple  
 $7-24-25$

$x^2 + y^2 = r^2$   
 $x^2 + (7)^2 = (25)^2$   
 $x^2 + 49 = 625$   
 $x^2 = 576$   
 $x = \pm 24$

$\tan \theta = \frac{7}{-24}$

**WITHOUT USING THE UNIT CIRCLE OR TABLE!**

Find the exact value.

If  $0^\circ \leq \theta \leq 360^\circ$ , then find  $\theta$

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

5.  $\cos(-\frac{5\pi}{4}) = -\frac{\sqrt{2}}{2}$

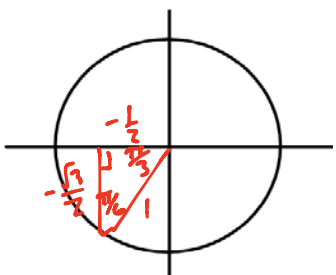
6.  $\sin \theta = \frac{\sqrt{2}}{2}$

$\theta = 45^\circ, 135^\circ$

7.  $\cos \theta = -\frac{1}{2}$

$\theta = 120^\circ, 240^\circ$

8. Find all six trig functions. Fill in the table. **WITHOUT USING THE UNIT CIRCLE OR TABLE!**



radians	$\sin \theta$	$\cos \theta$	$\tan \theta$	$\csc \theta$	$\sec \theta$	$\cot \theta$
$\frac{4\pi}{3}$	$-\frac{\sqrt{3}}{2}$	$-\frac{1}{2}$	$\sqrt{3}$	$\frac{2\sqrt{3}}{-3}$	$-2$	$\frac{\sqrt{3}}{3}$

**USE THE UNIT CIRCLE AND TABLE!**

Use the table to find the EXACT value.

Use the table to find the angle where  $0^\circ \leq \theta \leq 360^\circ$ .

9.  $\sec 300^\circ = 2$

10.  $\sin \frac{5\pi}{4} = -\frac{\sqrt{2}}{2}$

11.  $\cos \theta = -\frac{\sqrt{2}}{2}$

$\theta = 135^\circ, 225^\circ$

12.  $\csc \theta = -2$

$\sin \theta = -\frac{1}{2}$

$\theta = 210^\circ, 330^\circ$

**Round to the nearest hundredth!**

Find the APPROXIMATE value.

APPROXIMATE each angle where  $0^\circ \leq \theta \leq 360^\circ$ .

13.  $\csc 70^\circ$   
 $= \frac{1}{\sin 70^\circ}$   
 $\approx 1.064$

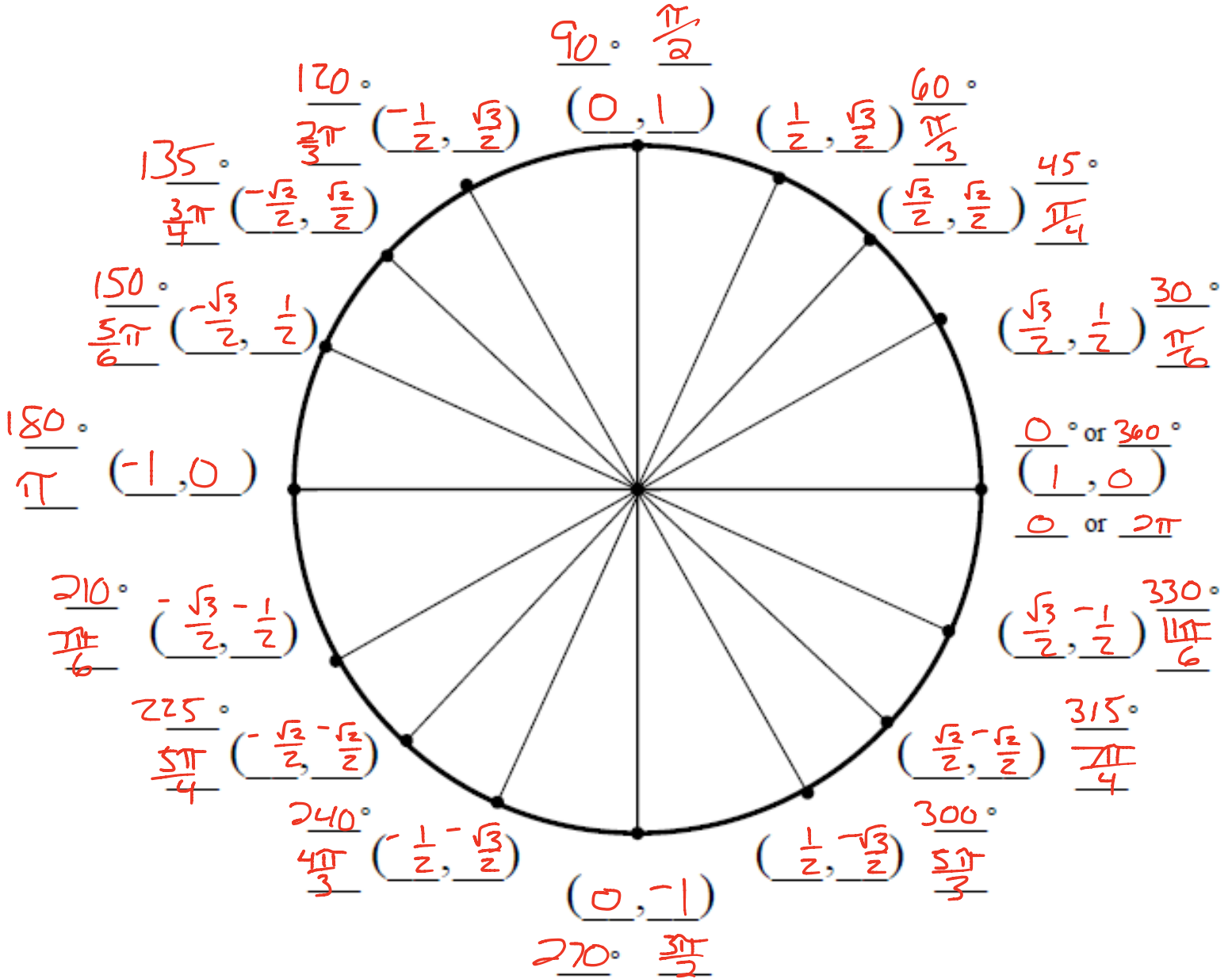
14.  $\cot(-115^\circ)$   
 $= \frac{1}{\tan(-115^\circ)}$   
 $\approx 0.466$

15.  $\cos \theta = -0.848048$   
 $\theta = \cos^{-1}(0.848048)$   
 $\theta = 148^\circ, 212^\circ$

16.  $\csc \theta = 1.72$   
 $\sin \theta = \frac{1}{1.72}$   
 $\theta = \sin^{-1}(\frac{1}{1.72})$   
 $\theta \approx 36^\circ, 144^\circ$

# APPLICATION

Fill in every angle measure in degrees, radians, and give the coordinates of the point on the unit circle.



Fill in the missing parts of the table.

degrees	radians	sin $\theta$	cos $\theta$	tan $\theta$	csc $\theta$	sec $\theta$	cot $\theta$	- degree	- radian
60°	$\frac{\pi}{3}$	$\frac{\sqrt{3}}{2}$	$\frac{1}{2}$	$\sqrt{3}$	$\frac{2\sqrt{3}}{3}$	2	$\frac{\sqrt{3}}{3}$	-300	$-\frac{5\pi}{3}$
120°	$\frac{2\pi}{3}$	$\frac{\sqrt{3}}{2}$	$-\frac{1}{2}$	$-\sqrt{3}$	$\frac{2\sqrt{3}}{3}$	-2	$-\frac{\sqrt{3}}{3}$	-240°	$-\frac{4\pi}{3}$
240°	$\frac{4\pi}{3}$	$-\frac{\sqrt{3}}{2}$	$-\frac{1}{2}$	$\sqrt{3}$	$-\frac{2\sqrt{3}}{3}$	-2	$\frac{\sqrt{3}}{3}$	-120°	$-\frac{2\pi}{3}$
180°	$\pi$	0	-1	0	und	-1	und	-180°	$-\pi$