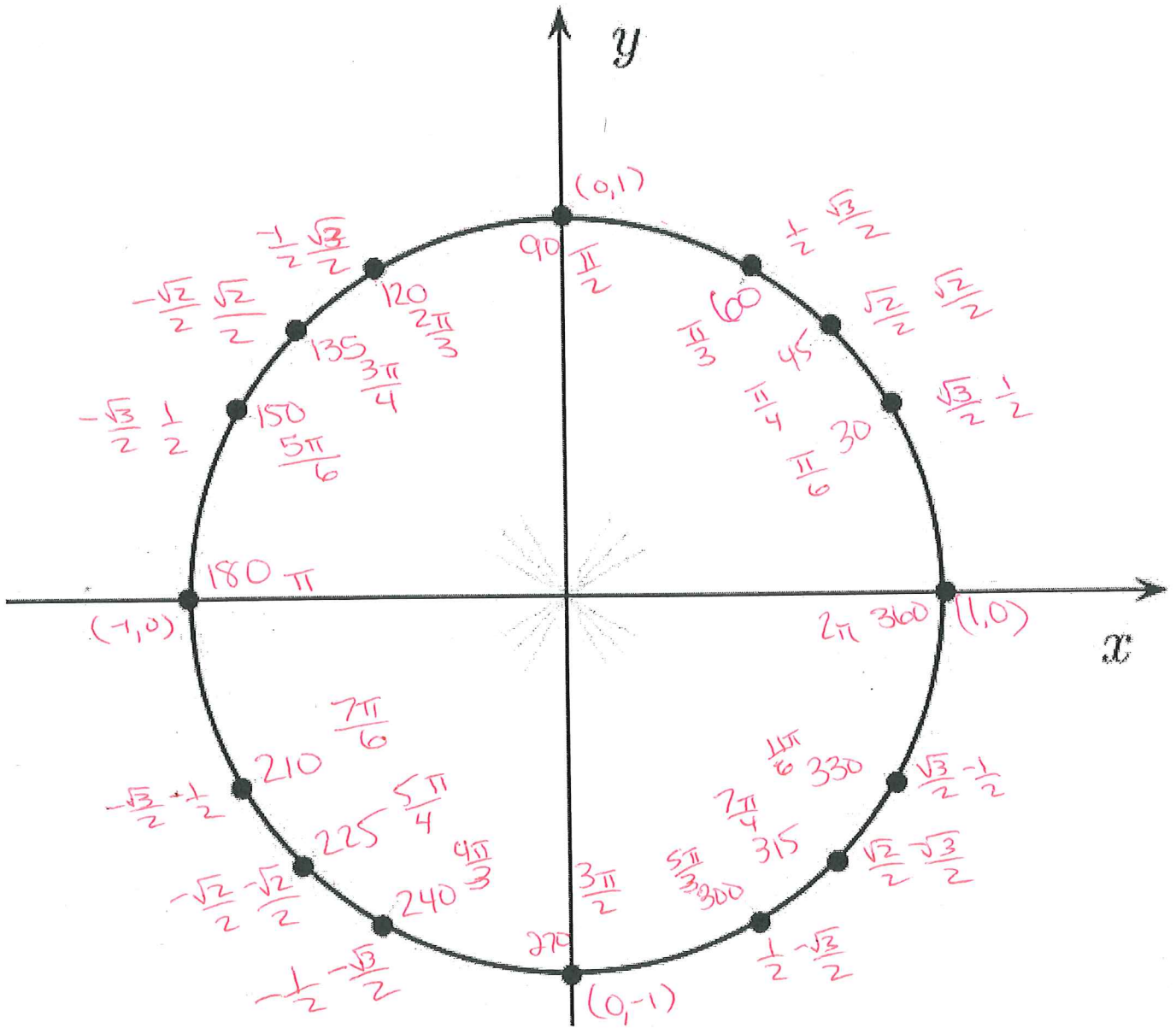


Label all angles in degrees & radians. Label the coordinates for each point on the unit circle.



Find the exact value of each trigonometric function.

1.  $\tan(-510^\circ) = \frac{\sqrt{3}}{3}$

2.  $\csc \frac{11\pi}{4} = \sqrt{2}$

~~3.  $\cos 45^\circ = \cos 270^\circ = 0$~~

4.  $\sin(-90^\circ) = -1$

5.  $\cot 1665^\circ = 1$

~~6.  $\cos 330^\circ = \cos \frac{4\pi}{3} = -\frac{1}{2}$~~

7.  $\cot 30^\circ = \sqrt{3}$

8.  $\tan 315^\circ = -1$

~~10.  $\sin 5\pi = \cot(\pi) = \text{undefined}$~~

11.  $\csc \frac{\pi}{4} = \sqrt{2}$

12.  $\tan \frac{4\pi}{3} = \sqrt{3}$

~~13.  $\sin \frac{7\pi}{3} = \tan \frac{5\pi}{3} = -\sqrt{3}$~~

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

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

16.  $\sin 330^\circ = -\frac{1}{2}$

17.  $\cos 330^\circ = \frac{\sqrt{3}}{2}$

18.  $\cos(-60^\circ) = \frac{1}{2}$

19.  $\sin(-390^\circ) = -\frac{1}{2}$

20.  $\sin 5\pi = 0$

21.  $\cos 3\pi = -1$

22.  $\sin \frac{5\pi}{2} = 1$

23.  $\sin \frac{7\pi}{3} = \frac{\sqrt{3}}{2}$

24.  $\cos\left(-\frac{7\pi}{3}\right) = \frac{1}{2}$

25.  $\cos\left(-\frac{5\pi}{6}\right) = -\frac{\sqrt{3}}{2}$

26.  $\cos 30^\circ + \cos 60^\circ$

$\frac{\sqrt{3}}{2} + \frac{1}{2} = \frac{\sqrt{3}+1}{2}$

27.  $5(\sin 45^\circ)(\cos 45^\circ)$

$5\left(\frac{\sqrt{2}}{2}\right)\left(\frac{\sqrt{2}}{2}\right) = \frac{10}{4} = \frac{5}{2}$

28.  $\frac{\sin 120^\circ + \cos 240^\circ}{3}$

$\frac{\frac{1}{2} + (-\frac{1}{2})}{3} = -\frac{1}{3}$

Suppose  $\theta$  is an angle in standard position whose terminal side is in the given quadrant. For each function, find the exact values of the remaining five trigonometric functions of  $\theta$ .

29.  $\sin \theta = \frac{4}{5}$ , Quadrant II

$\cos \theta = -\frac{3}{5}$

$\tan \theta = -\frac{4}{3}$

$\csc \theta = \frac{5}{4}$

$\sec \theta = -\frac{5}{3}$

$\cot \theta = -\frac{3}{4}$

30.  $\tan \theta = -\frac{12}{5}$ , Quadrant IV

$\sin \theta = -\frac{12}{13}$

$\cos \theta = \frac{5}{13}$

$\csc \theta = -\frac{13}{12}$

$\sec \theta = \frac{13}{5}$

$\cot \theta = -\frac{5}{12}$