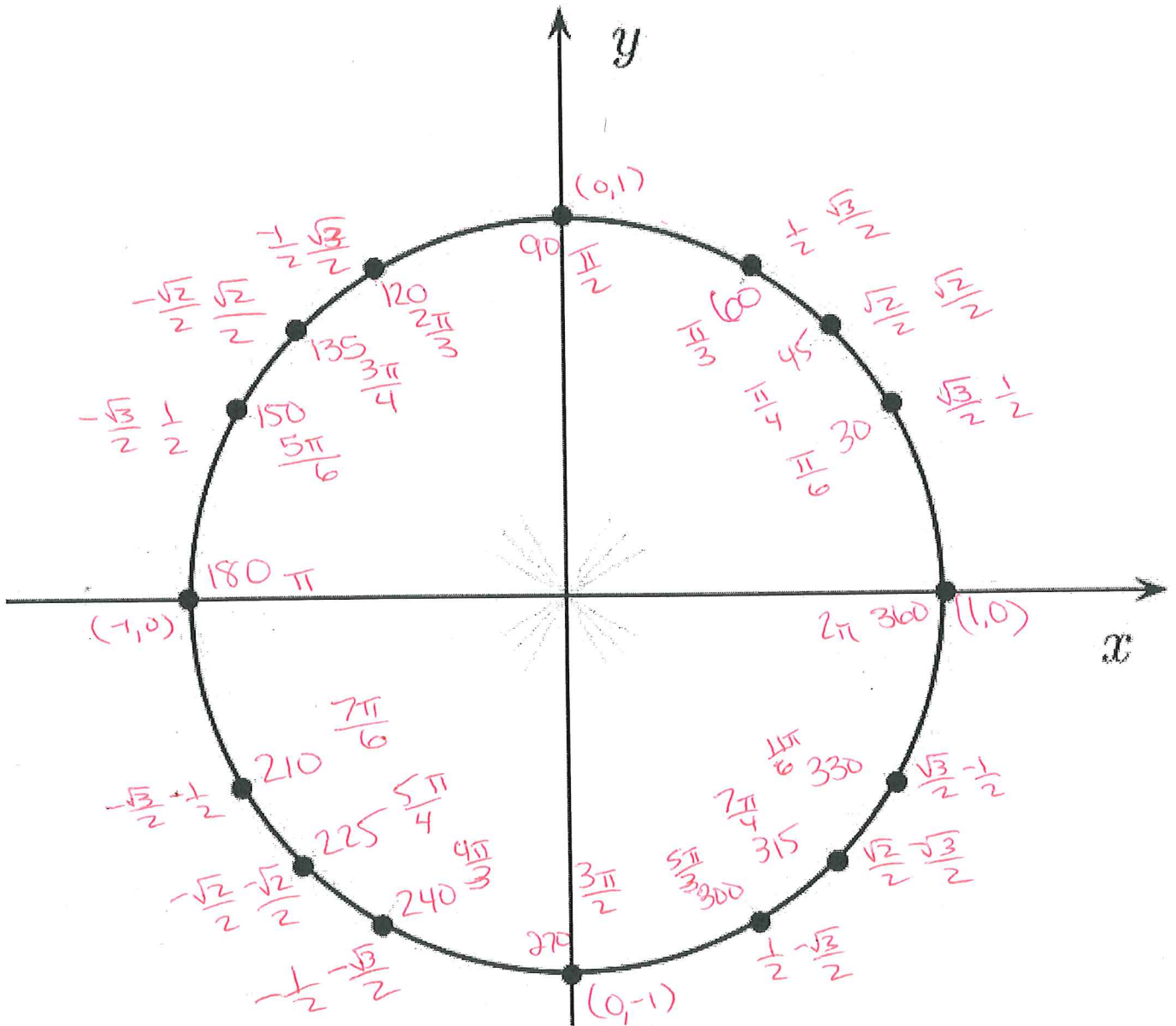


Label all angles in degrees & radians. Label the coordinates for each point on the unit circle.



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 θ 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 θ .

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

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

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

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

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

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