PRE-CALCULUS

Name Key

Standard Trig. Values Review

Complete the following chart with ***exact*** values in standard, simplified form.

* $\sqrt{3} \to \frac{\sqrt{3}}{3}$ are always reciprocals

Reciprocal

$\theta°$	θ(radians)	Quadrant	Ref θ	$\sin\theta$	$\cos\theta$	$\tan\theta$	$\cot\theta$	$\sec\theta$	$\csc\theta$
60°	$\frac{\pi}{3}$	I	$\frac{\pi}{3}$ or 60°	$\frac{\sqrt{3}}{2}$	$\frac{1}{2}$	$\frac{\sqrt{3}/2}{1/2} = \frac{\sqrt{3}}{2}\cdot\frac{2}{1} = \sqrt{3}$	$\frac{1/2}{\sqrt{3}/2} = \frac{1}{2}\cdot\frac{2}{\sqrt{3}} = \frac{1}{\sqrt{3}} = \frac{\sqrt{3}}{3}$	2	$\frac{2}{\sqrt{3}}\cdot\frac{\sqrt{3}}{\sqrt{3}} = \frac{2\sqrt{3}}{3}$
225°	$5\pi/4$	III	$\frac{\pi}{4}$ or 45°	$-\frac{\sqrt{2}}{2}$	$-\frac{\sqrt{2}}{2}$	$\frac{-\sqrt{2}/2}{-\sqrt{2}/2} = 1$	1	$-\frac{2}{\sqrt{2}}\cdot\frac{\sqrt{2}}{\sqrt{2}} = -\sqrt{2}$	$-\sqrt{2}$
240°	$\frac{4\pi}{3}$	III	$\frac{\pi}{3}$ or 60°	$-\frac{\sqrt{3}}{2}$	$-1/2$	$\frac{-\sqrt{3}/2}{-1/2} = \frac{-\sqrt{3}}{2}\cdot\frac{-2}{1} = \sqrt{3}$	$\frac{-1/2}{-\sqrt{3}/2} = \frac{-1}{2}\cdot\frac{-2}{\sqrt{3}} = \frac{1}{\sqrt{3}}\cdot\frac{\sqrt{3}}{\sqrt{3}} = \frac{\sqrt{3}}{3}$	-2	$\frac{1}{-\sqrt{3}/2} = -\frac{2}{\sqrt{3}}\cdot\frac{\sqrt{3}}{\sqrt{3}} = -\frac{2\sqrt{3}}{3}$
330°	$\frac{11\pi}{6}$	IV	30°	$-\frac{1}{2}$	$\frac{\sqrt{3}}{2}$	$\frac{-1/2}{\sqrt{3}/2} = -\frac{1}{2}\cdot\frac{2}{\sqrt{3}} = -\frac{1}{\sqrt{3}} = -\frac{\sqrt{3}}{3}$	$-\sqrt{3}$	$\frac{2}{\sqrt{3}}\cdot\frac{\sqrt{3}}{\sqrt{3}} = \frac{2\sqrt{3}}{3}$	-2
270°	$\frac{3\pi}{2}$	Negative y-axis	NA	-1	0	$\frac{-1}{0}$ = und	$\frac{0}{-1} = 0$	$\frac{1}{0}$ = und	-1
-585°	$-585\cdot\frac{\pi}{180} = -\frac{585\pi}{180} = -\frac{13\pi}{4}$	II	$\frac{\pi}{4}$ or 45°	$\frac{\sqrt{2}}{2}$	$-\frac{\sqrt{2}}{2}$	$\frac{\sqrt{2}/2}{-\sqrt{2}/2} = -1$	-1	$\frac{1}{-\sqrt{2}/2} = -\frac{2}{\sqrt{2}}\cdot\frac{\sqrt{2}}{\sqrt{2}} = -\sqrt{2}$	$\frac{2}{\sqrt{2}}\cdot\frac{\sqrt{2}}{\sqrt{2}} = \sqrt{2}$
150°	$\frac{5\pi}{6}$	II	$\frac{\pi}{6}$ or 30°	$\frac{1}{2}$	$-\sqrt{3}/2$	$\frac{1/2}{-\sqrt{3}/2} = \frac{1}{2}\cdot\frac{-2}{\sqrt{3}} = -\frac{1}{\sqrt{3}} = -\frac{\sqrt{3}}{3}$	$-\sqrt{3}$	$\frac{2}{-\sqrt{3}}\cdot\frac{\sqrt{3}}{\sqrt{3}} = -\frac{2\sqrt{3}}{3}$	2
30°	$\frac{\pi}{6}$	I	$\frac{\pi}{6}$ or 30°	$\frac{1}{2}$	$\frac{\sqrt{3}}{2}$	$\frac{1}{\sqrt{3}}\cdot\frac{\sqrt{3}}{\sqrt{3}} = \frac{\sqrt{3}}{3}$	$\sqrt{3}$	$\frac{1}{\sqrt{3}/2} = \frac{2}{\sqrt{3}}\cdot\frac{\sqrt{3}}{\sqrt{3}} = \frac{2\sqrt{3}}{3}$	2
-240°	$-4\pi/3$	II	$\frac{\pi}{3}$ or 60°	$\frac{\sqrt{3}}{2}$	$-\frac{1}{2}$	$\frac{\sqrt{3}/2}{-1/2} = \frac{\sqrt{3}}{2}\cdot\frac{-2}{1} = -\sqrt{3}$	$-\frac{\sqrt{3}}{3}$	-2	$\frac{2}{\sqrt{3}}\cdot\frac{\sqrt{3}}{\sqrt{3}} = \frac{2\sqrt{3}}{3}$
180°	π	Negative x-axis	NA	0	-1	$\frac{0}{-1} = 0$	$\frac{-1}{0}$ = und	-1	$\frac{1}{0}$ = und
-90°	$-\pi/2$	Negative y-axis	NA	-1	0	$\frac{-1}{0}$ = und	$\frac{0}{-1} = 0$	$\frac{1}{0}$ = und	-1