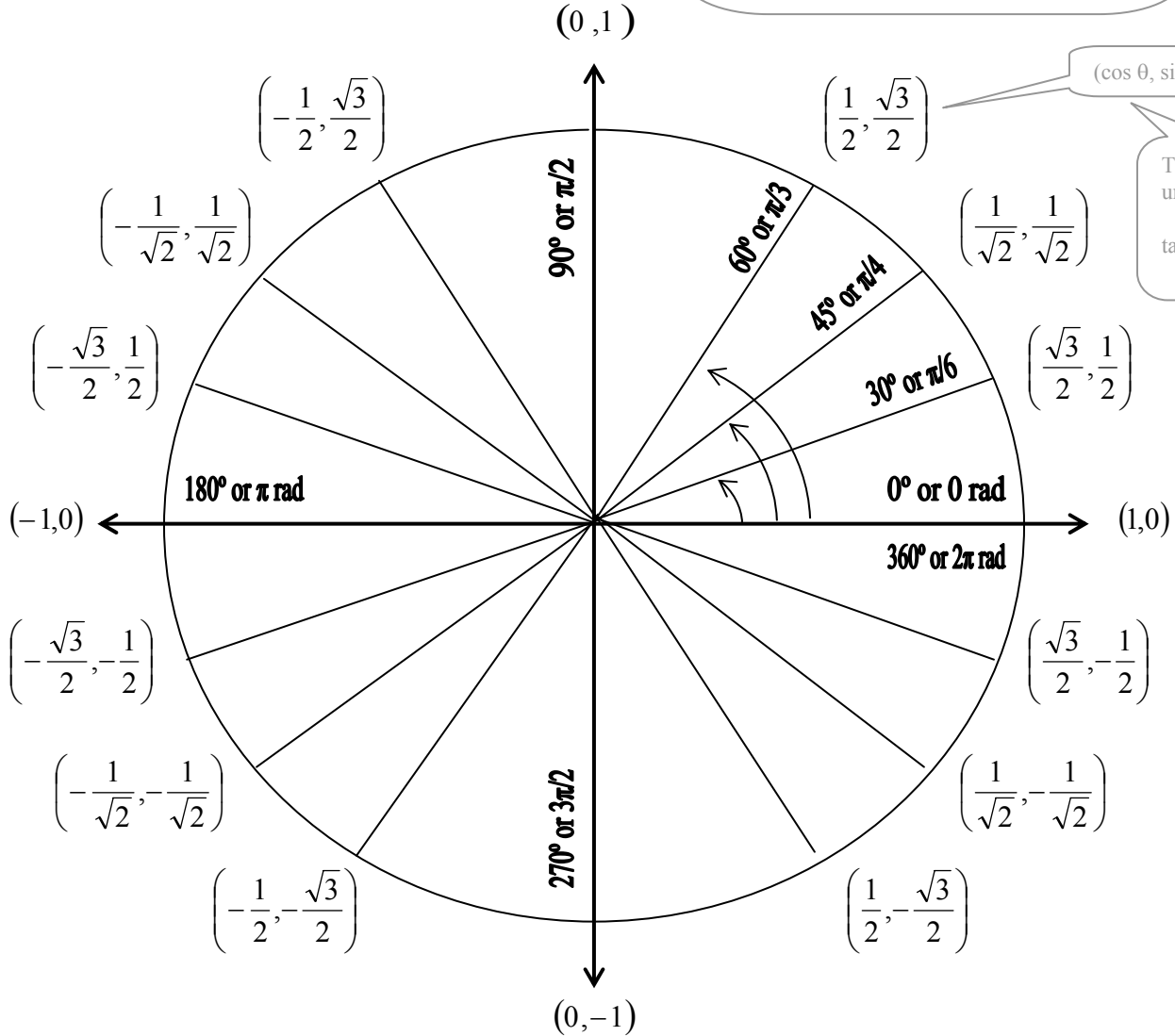


### 5.3B - Unit Circle Investigation

The benefit of using a radial arm of length 1 unit means that our ratios become actual (x,y) coordinates. One can then memorize these points without the extra complication of using the CAST memory aid. Furthermore the 'Unit Circle' allows us to generate a useful chart to plot the basic trigonometric ratios.



$\theta^\circ$	$0^\circ$	$30^\circ$	$45^\circ$	$60^\circ$	$90^\circ$	$120^\circ$	$135^\circ$	$150^\circ$	$180^\circ$	$210^\circ$	$225^\circ$	$240^\circ$	$270^\circ$	$300^\circ$	$315^\circ$	$330^\circ$	$360^\circ$
$\theta^\circ$ (in rads)	0	$\frac{\pi}{6}$	$\frac{\pi}{4}$	$\frac{\pi}{3}$	$\frac{\pi}{2}$	$\frac{2\pi}{3}$											
Sin $\theta^\circ$	0	$\frac{1}{2}$	$\frac{1}{\sqrt{2}}$	$\frac{\sqrt{3}}{2}$	1												
Cos $\theta^\circ$	1	$\frac{\sqrt{3}}{2}$	$\frac{1}{\sqrt{2}}$	$\frac{1}{2}$	0												
Tan $\theta^\circ$	0	$\frac{1}{\sqrt{3}}$	1	$\sqrt{3}$	-												
Pt (x,y) (exact)	(1,0)	$\left(\frac{\sqrt{3}}{2}, \frac{1}{2}\right)$	$\left(\frac{1}{\sqrt{2}}, \frac{1}{\sqrt{2}}\right)$	$\left(\frac{1}{2}, \frac{\sqrt{3}}{2}\right)$													
Pt (x,y) (decimal)	(1,0)	(0.87,0.5)	(0.7,0.7)	(0.5,0.87)													