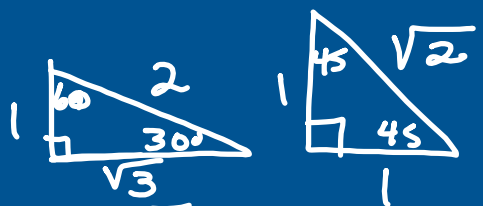
Special Angle Values

Deg	csc / sin	sec / cos	cot / tan	
0°	$\frac{\sqrt{0}}{2}=0$	1	$\frac{0}{1}=0$	
30°	$\frac{\sqrt{1}}{2}=\frac{1}{2}$	$\sqrt{3}/2$	$\frac{1}{\sqrt{3}}=\frac{\sqrt{3}}{3}$	
45°	$\frac{\sqrt{2}}{2}$	$\sqrt{2}/2$	$\frac{\sqrt{2}}{\sqrt{2}}=1$	
60°	$\frac{\sqrt{3}}{2}$	$1/2$	$\frac{\sqrt{3}}{1}=\sqrt{3}$	
90°	$\frac{\sqrt{4}}{2}=1$	0	$\frac{1}{0}=$ undef	



$1, 2, \sqrt{3}$

$\sin 30° = \frac{\text{opp}}{\text{hyp}} = \frac{1}{2}$

$\cos 45° = \frac{\text{adj}}{\text{hyp}} = \frac{1}{\sqrt{2}} = \frac{1}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \sqrt{2}/2$

$\sin 60° = \frac{\sqrt{3}}{2}$

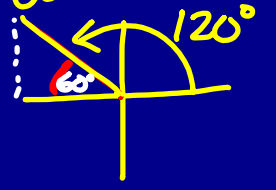
$\tan 0° = 0$

$\sec 30° = \frac{2}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{2\sqrt{3}}{3}$

Special Angle Values

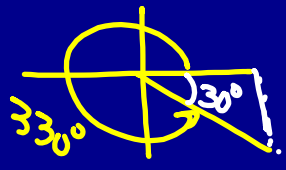
Deg	csc / Sin	sec / Cos	cot / Tan	
0°	$\frac{\sqrt{0}}{2}=0$	1	$\frac{0}{1}=0$	
30°	$\frac{\sqrt{1}}{2}=\frac{1}{2}$	$\sqrt{3}/2$	$\frac{1}{\sqrt{3}}=\frac{\sqrt{3}}{3}$	
45°	$\frac{\sqrt{2}}{2}$	$\sqrt{2}/2$	$\frac{\sqrt{2}}{\sqrt{2}}=1$	
60°	$\frac{\sqrt{3}}{2}$	$1/2$	$\frac{\sqrt{3}}{1}=\sqrt{3}$	
90°	$\frac{\sqrt{4}}{2}=1$	0	$\frac{1}{0}$=undef	

$\cos 120° = \frac{-1}{2}$



sin θ, csc θ	All
tan θ, cot θ	cos θ, sec θ

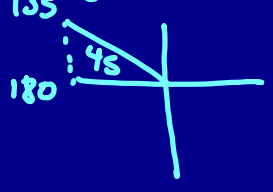
$\tan 330° = \frac{-\sqrt{3}}{3}$



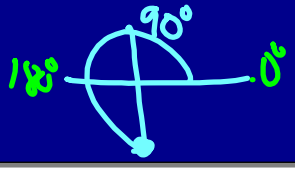
$\csc 135° = \frac{2}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}}$

$= \frac{2\sqrt{2}}{2}$

$= +\sqrt{2}$



$\sin 270° = -1$



Special Angle Values

Deg	csc sin	sec cos	cot tan	
0°	$\frac{\sqrt{0}}{2}=0$	1	$\frac{0}{1}=0$	
30°	$\frac{\sqrt{1}}{2}=\frac{1}{2}$	$\sqrt{3}/2$	$\frac{1}{\sqrt{3}}=\frac{\sqrt{3}}{3}$	
45°	$\frac{\sqrt{2}}{2}$	$\sqrt{2}/2$	$\frac{\sqrt{2}}{\sqrt{2}}=1$	
60°	$\frac{\sqrt{3}}{2}$	$1/2$	$\frac{\sqrt{3}}{1}=\sqrt{3}$	
90°	$\frac{\sqrt{4}}{2}=1$	0	$\frac{1}{0}=$ undef	

$\sin^2 240° - \cot(-225°)\sec(540°)$

$(\sin 240°)^2 - (\quad)(\quad)$

$\left(-\frac{\sqrt{3}}{2}\right)^2 - (-1)(-1)$

$\frac{3}{4} - 1 = \frac{-1}{4}$

Special Angle Values

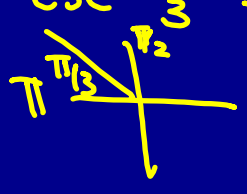
Deg	csc sin	sec cos	cot tan	Rads
0°	$\frac{\sqrt{0}}{2}=0$	1	$\frac{0}{1}=0$	0
30°	$\frac{\sqrt{1}}{2}=\frac{1}{2}$	$\sqrt{3}/2$	$\frac{1}{\sqrt{3}}=\frac{\sqrt{3}}{3}$	$\pi/6$
45°	$\frac{\sqrt{2}}{2}$	$\sqrt{2}/2$	$\frac{\sqrt{2}}{\sqrt{2}}=1$	$\pi/4$
60°	$\frac{\sqrt{3}}{2}$	$1/2$	$\frac{\sqrt{3}}{1}=\sqrt{3}$	$\pi/3$
90°	$\frac{\sqrt{4}}{2}=1$	0	$\frac{1}{0}=$ undef	$\pi/2$

$60° \cdot \frac{\pi}{180°} = \frac{\pi}{3}$

$\cos\frac{\pi}{6} = \frac{\sqrt{3}}{2}$

$\cot\frac{\pi}{3} = \frac{1}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{\sqrt{3}}{3}$

$\csc\frac{2\pi}{3} = \frac{2}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{2\sqrt{3}}{3}$ (+)

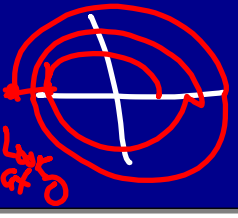


$\sin\frac{7\pi}{6}$

$7\pi/6 = 1\frac{1}{6}\pi$

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

$\cos 5\pi = -1$



May 13, 2025