reciprocal identities

$$\sin\theta = \frac{1}{\csc\theta}$$

$$\csc\theta = \frac{1}{\sin\theta}$$

COSECANT

$$\cos\theta = \frac{1}{\sec\theta}$$

$$\sec\theta = \frac{1}{\cos\theta}$$

SECANT

$$\tan\theta = \frac{1}{\cot\theta}$$

$$\cot\theta = \frac{1}{\tan\theta}$$

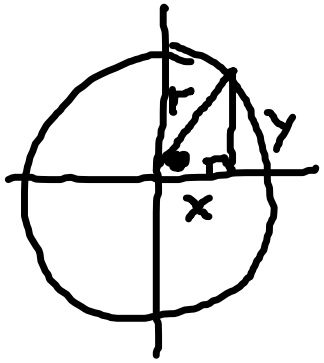
COTANGENT

ratio identities

$$\tan\theta = \frac{\sin\theta}{\cos\theta}$$

$$\frac{y}{x} = \frac{\frac{y}{r}}{\frac{x}{r}} = \frac{y}{x}$$

$$\cot\theta = \frac{\cos\theta}{\sin\theta}$$



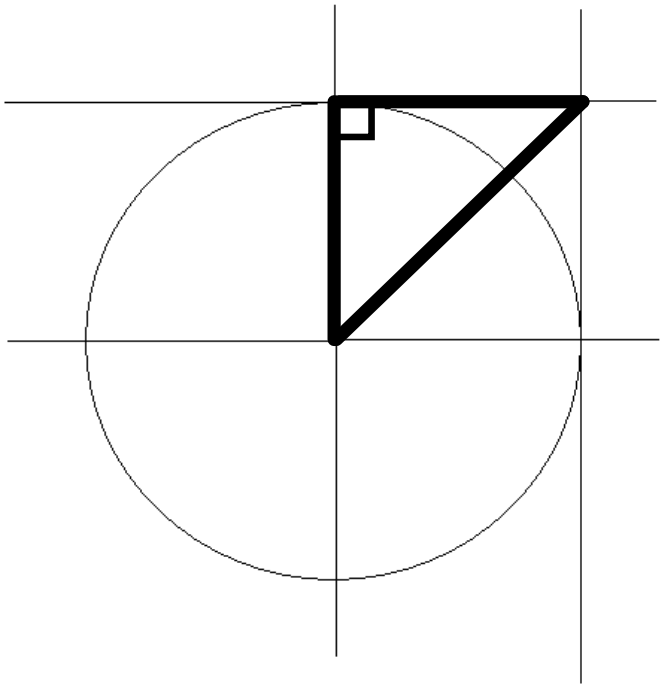
$$\tan^2\theta + 1 = \sec^2\theta$$

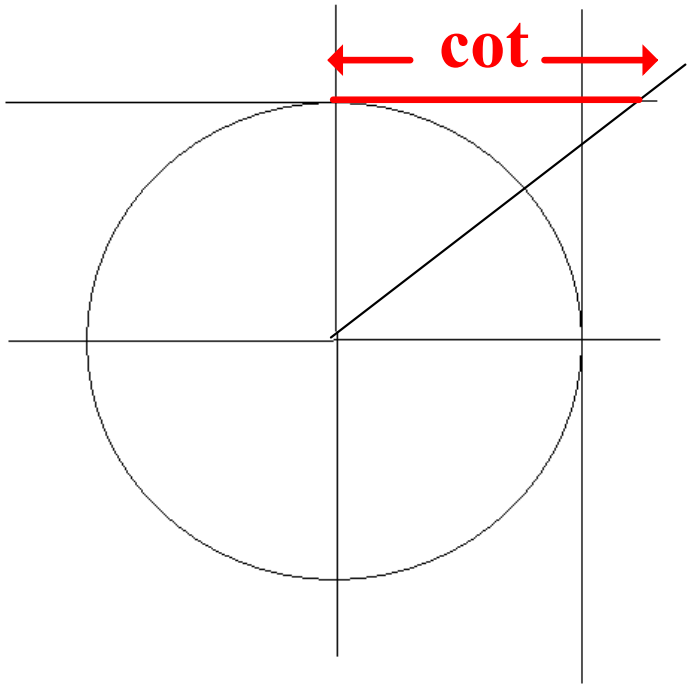
$$\left(\frac{y}{x}\right)^2 + 1 = \left(\frac{r}{x}\right)^2$$

$$\frac{y^2}{x^2} + 1 = \frac{r^2}{x^2}$$

$$y^2 + x^2 = r^2$$

	0	$\frac{\pi}{6}$	$\frac{\pi}{4}$	$\frac{\pi}{3}$	$\frac{\pi}{2}$	$\frac{2\pi}{3}$	$\frac{3\pi}{4}$	$\frac{5\pi}{6}$	π	$\frac{7\pi}{6}$	$\frac{5\pi}{4}$	$\frac{4\pi}{3}$	$\frac{3\pi}{2}$	$\frac{5\pi}{3}$	$\frac{7\pi}{4}$
	0	30	45	60	90	120	135	150	180	210	225	240	270	300	315
SIN	0	$\frac{1}{2}$	$\frac{1}{\sqrt{2}}$	$\frac{\sqrt{3}}{2}$	1	$\frac{\sqrt{3}}{2}$	$\frac{1}{\sqrt{2}}$	$\frac{1}{2}$	0	$-\frac{1}{2}$	$-\frac{1}{\sqrt{2}}$	$-\frac{\sqrt{3}}{2}$	-1	$-\frac{\sqrt{3}}{2}$	$-\frac{1}{\sqrt{2}}$
COS	1	$\frac{\sqrt{3}}{2}$	$\frac{1}{\sqrt{2}}$	$\frac{1}{2}$	0	$-\frac{1}{2}$	$-\frac{1}{\sqrt{2}}$	$-\frac{\sqrt{3}}{2}$	-1	$-\frac{\sqrt{3}}{2}$	$-\frac{1}{\sqrt{2}}$	$-\frac{1}{2}$	0	$\frac{1}{2}$	$\frac{1}{\sqrt{2}}$
TAN	0	$\frac{1}{\sqrt{3}}$	1	$\sqrt{3}$	UND	$-\sqrt{3}$	-1	$-\frac{1}{\sqrt{3}}$	0	$\frac{1}{\sqrt{3}}$	1	$\sqrt{3}$	UND	$-\sqrt{3}$	-1
CSC	UND	2	$\sqrt{2}$	$\frac{2}{\sqrt{3}}$	1	$\frac{2}{\sqrt{3}}$	$\sqrt{2}$								
SEC	1	$\frac{2}{\sqrt{3}}$	$\sqrt{2}$	2	UND	-2	$-\sqrt{2}$								
COT	UND	$\sqrt{3}$	1	$\frac{1}{\sqrt{3}}$	0	$-\frac{1}{\sqrt{3}}$	-1								

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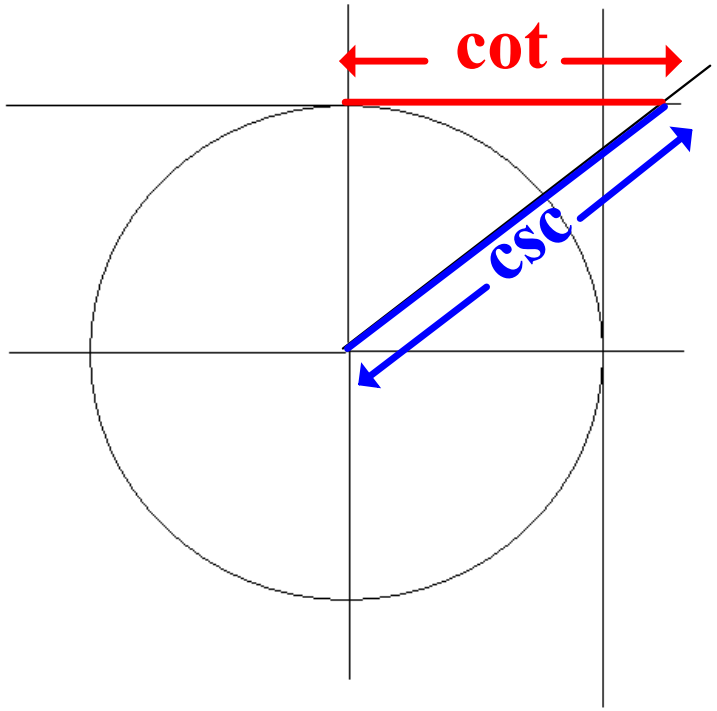
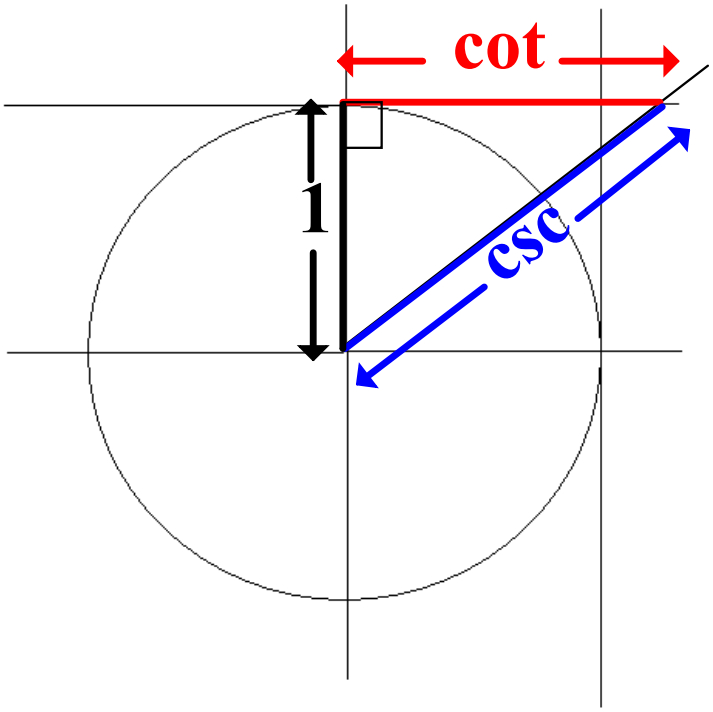
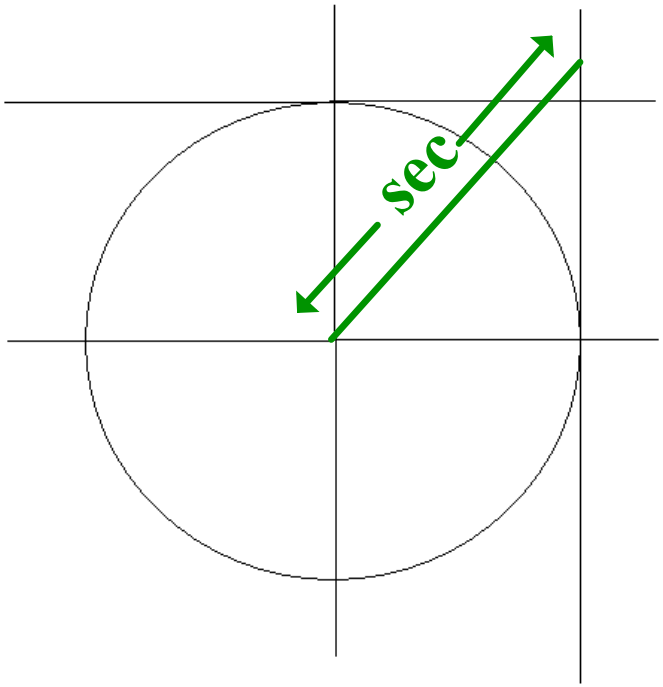
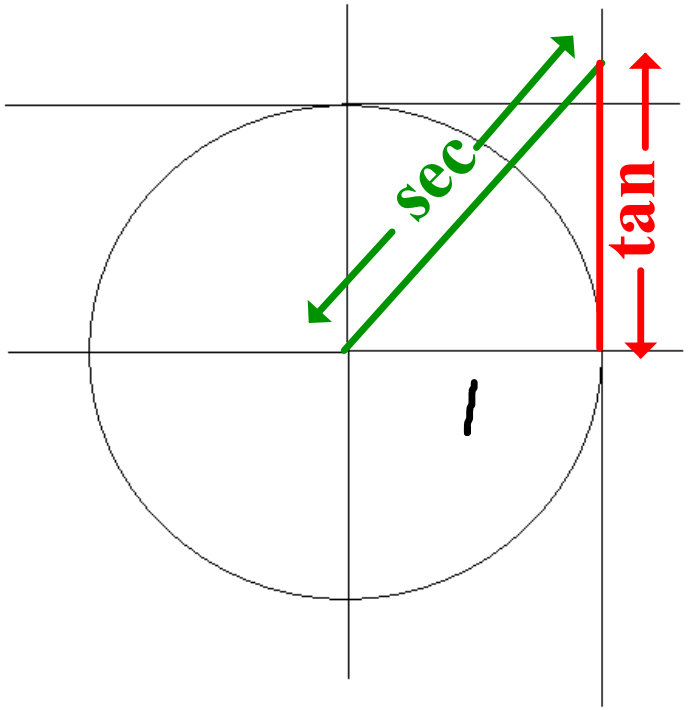

cot
csc

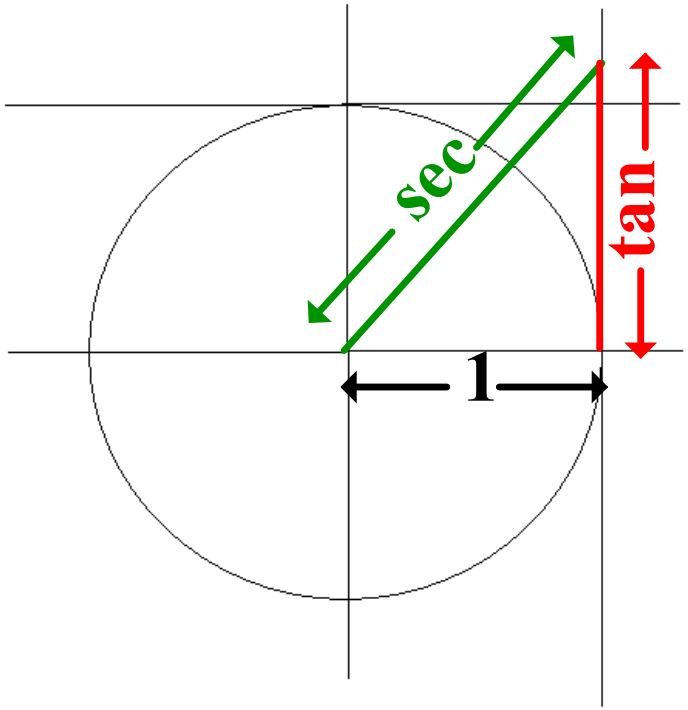


$1^2 + \cot^2\theta = \csc^2\theta$

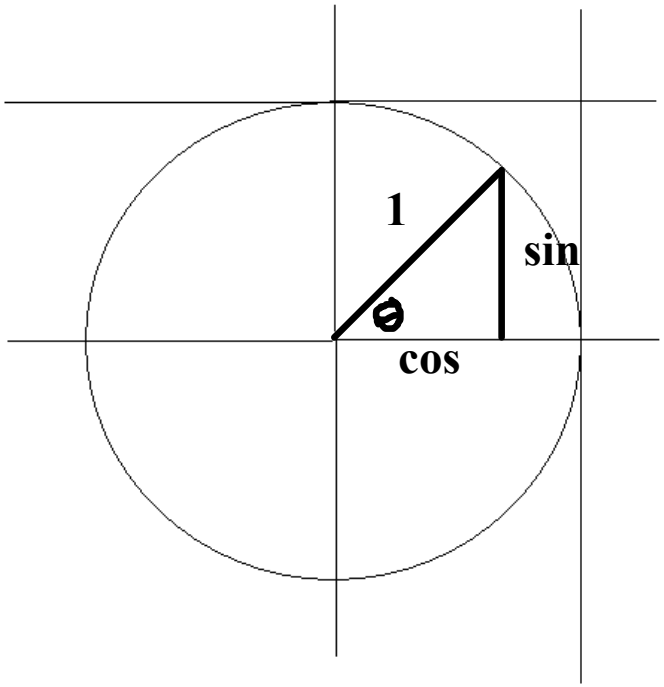

sec



$1^2 + \tan^2\theta = \sec^2\theta$



$1^2 + \tan^2\theta = \sec^2\theta$



$\sin^2\theta + \cos^2\theta = 1$

pythagorean identities

$\tan^2\theta + 1 = \sec^2\theta$

$\cot^2\theta + 1 = \csc^2\theta$

$\sin^2\theta + \cos^2\theta = 1$

reciprocal identities

$\csc\theta = \frac{1}{\sin\theta}$

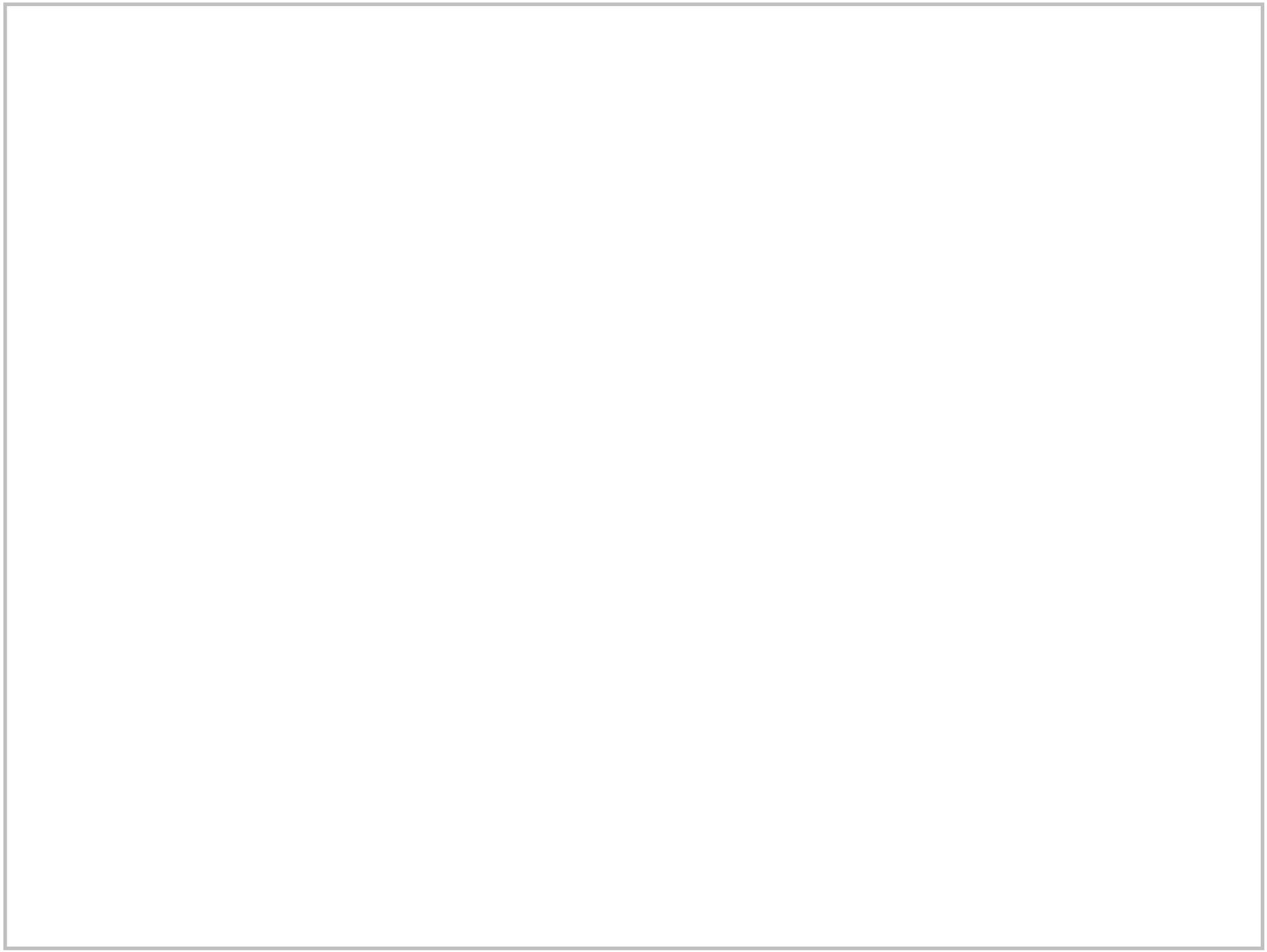
$\cot\theta = \frac{1}{\tan\theta}$

$\sec\theta = \frac{1}{\cos\theta}$

ratio identities

$\tan\theta = \frac{\sin\theta}{\cos\theta}$

$\cot\theta = \frac{\cos\theta}{\sin\theta}$



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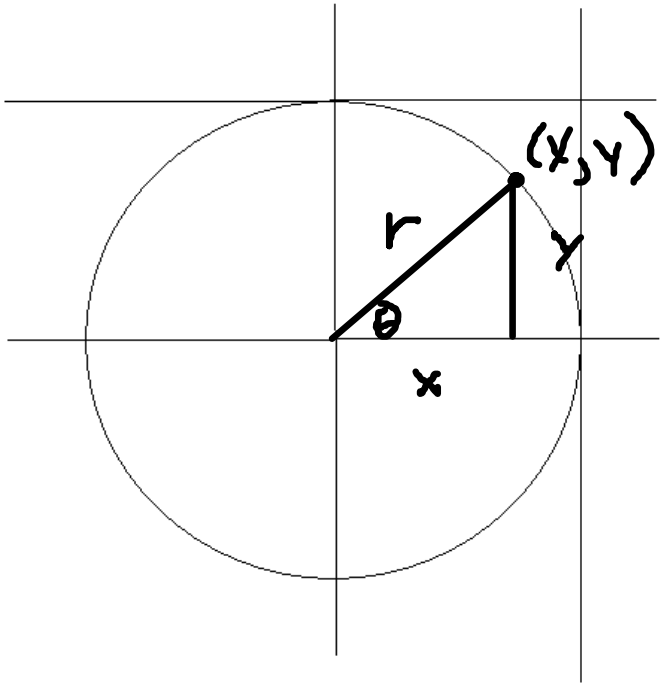


$$\sin\theta = \frac{y}{r} \qquad \cos\theta = \frac{x}{r}$$

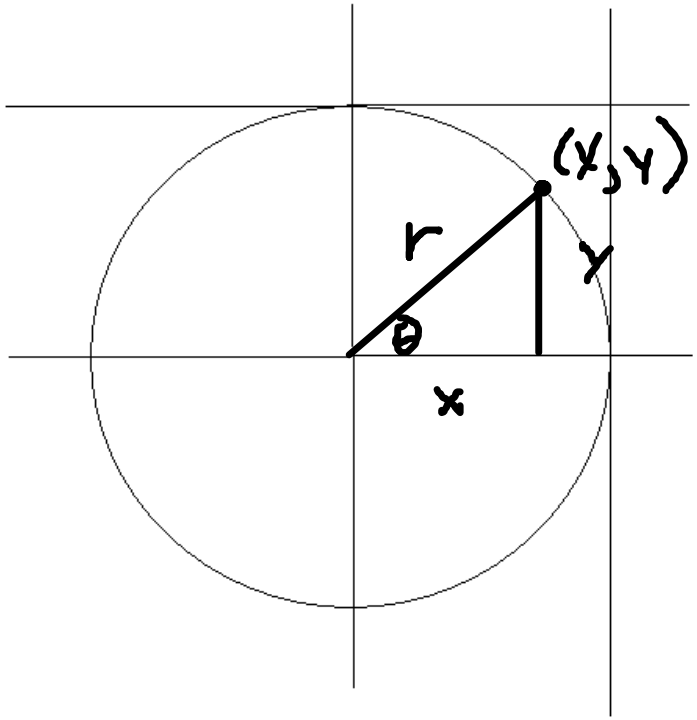
$$\tan\theta = \frac{y}{x}$$

$$\sin^2\theta + \cos^2\theta = 1$$

$$\left(\frac{y}{r}\right)^2 + \left(\frac{x}{r}\right)^2 = 1$$

$$\frac{y^2}{r^2} + \frac{x^2}{r^2} = 1$$

$$y^2 + x^2 = r^2$$



$$\tan\theta = \frac{\sin\theta}{\cos\theta}$$

$$\frac{y}{x} = \frac{\frac{y}{r}}{\frac{x}{r}}$$

$$= \frac{y}{r} \cdot \frac{r}{x} = \frac{y}{x}$$