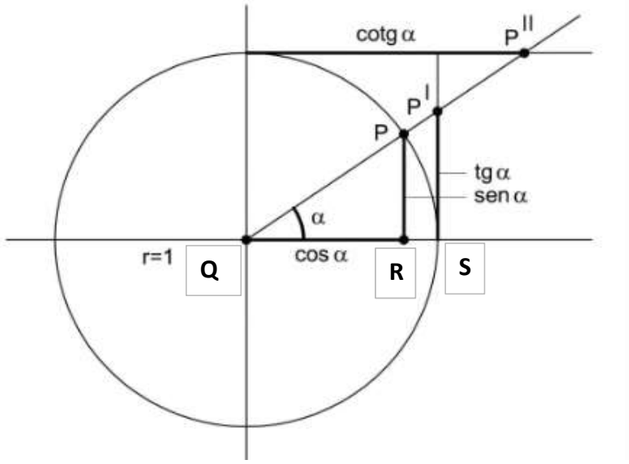
Funzioni trigonometriche	
Definizioni	In matematica, le funzioni trigonometriche o funzioni goniometriche o funzioni circolari sono funzioni di un angolo y(x) = f(alfa)

Principali funzioni trigonometriche

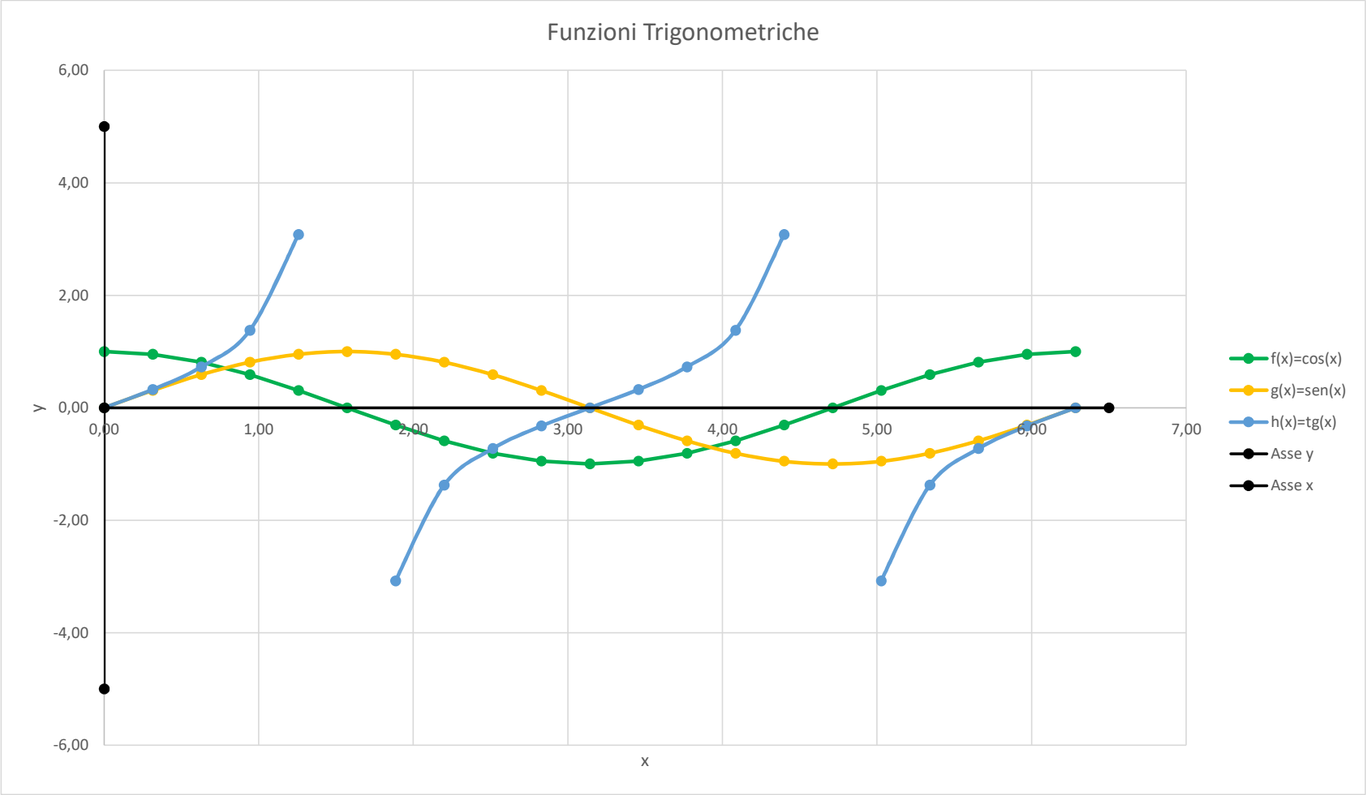
Funzione	Abbreviazione	Relazione
Seno	sin (o sen, nomenclatura italiana)	$\sin\theta = \cos\left(\frac{\pi}{2} - \theta\right)$
Coseno	cos	$\cos\theta = \sin\left(\frac{\pi}{2} - \theta\right)$
Tangente	tan (o tg)	$\tan\theta = \frac{1}{\cot\theta} = \frac{\sin\theta}{\cos\theta} = \cot\left(\frac{\pi}{2} - \theta\right)$
Cotangente	cot (o ctg)	$\cot\theta = \frac{1}{\tan\theta} = \frac{\cos\theta}{\sin\theta} = \tan\left(\frac{\pi}{2} - \theta\right)$
Secante	sec	$\sec\theta = \frac{1}{\cos\theta} = \csc\left(\frac{\pi}{2} - \theta\right)$
Cosecante	csc (o cosec)	$\csc\theta = \frac{1}{\sin\theta} = \sec\left(\frac{\pi}{2} - \theta\right)$

Funzioni Trigonometriche					
f(x)=cos(x)		g(x)=sen(x)		h(x)=tg(x)	
x	y	x	y	x	y
0,00	1,00	0	0	0,00	0,0
0,31	0,95	0,31	0,31	0,31	0,3
0,63	0,81	0,63	0,59	0,63	0,7
0,94	0,59	0,94	0,81	0,94	1,4
1,26	0,31	1,26	0,95	1,26	3,1
1,57	0,00	1,57	1,00	1,57	
1,88	-0,31	1,88	0,95	1,88	-3,1
2,20	-0,59	2,20	0,81	2,20	-1,4
2,51	-0,81	2,51	0,59	2,51	-0,7
2,83	-0,95	2,83	0,31	2,83	-0,3
3,14	-1,00	3,14	0,00	3,14	0,0
3,46	-0,95	3,46	-0,31	3,46	0,3
3,77	-0,81	3,77	-0,59	3,77	0,7
4,08	-0,59	4,08	-0,81	4,08	1,4
4,40	-0,31	4,40	-0,95	4,40	3,1
4,71	0,00	4,71	-1,00	4,71	
5,03	0,31	5,03	-0,95	5,03	-3,1
5,34	0,59	5,34	-0,81	5,34	-1,4
5,65	0,81	5,65	-0,59	5,65	-0,7
5,97	0,95	5,97	-0,31	5,97	-0,3
6,28	1,00	6,28	0,00	6,28	0,0



Asse y	
x	y
0	-5
0	5
Asse x	
x	y
0	0
6,5	0

QR	Cos(alfa)	alfa	°	rad			
PR	Sen(alfa)		180°	Pigreco	3,14		
SP'	tg(alfa)		90°	Pigreco/2	1,570796327		
			45°	Pigreco/4			
			30°	Pigreco/6			
				180:Pigreco=31:x			
				0,54		54/100	27/50
				0,172222	0,17* pigreco		



$$\sin^2(\alpha) + \cos^2(\alpha) = 1$$

A seconda delle esigenze capita di doverla usare nelle forme

$$\sin^2(\alpha) = 1 - \cos^2(\alpha)$$

$$\cos^2(\alpha) = 1 - \sin^2(\alpha)$$

$$\sin\left(\frac{\pi}{2} - \alpha\right) = \cos(\alpha); \quad \cos\left(\frac{\pi}{2} - \alpha\right) = \sin(\alpha)$$

$$\sin\left(\frac{\pi}{2} + \alpha\right) = \cos(\alpha); \quad \cos\left(\frac{\pi}{2} + \alpha\right) = -\sin(\alpha)$$

$$\sin(\pi - \alpha) = \sin(\alpha); \quad \cos(\pi - \alpha) = -\cos(\alpha)$$

$$\sin(\pi + \alpha) = -\sin(\alpha); \quad \cos(\pi + \alpha) = -\cos(\alpha)$$

$$\sin\left(\frac{3}{2}\pi - \alpha\right) = -\cos(\alpha); \quad \cos\left(\frac{3}{2}\pi - \alpha\right) = -\sin(\alpha)$$

$$\sin\left(\frac{3}{2}\pi + \alpha\right) = -\cos(\alpha); \quad \cos\left(\frac{3}{2}\pi + \alpha\right) = \sin(\alpha)$$

$$\sin(-\alpha) = -\sin(\alpha); \quad \cos(-\alpha) = \cos(\alpha)$$

$$\sin(\alpha)\sin(\beta) = \frac{1}{2}[\cos(\alpha - \beta) - \cos(\alpha + \beta)] \quad \left(\frac{\alpha}{2}\right) = \pm\sqrt{\frac{1 + \cos(\alpha)}{2}}$$

$$\cos(\alpha)\cos(\beta) = \frac{1}{2}[\cos(\alpha - \beta) + \cos(\alpha + \beta)] \quad \left(\frac{\alpha}{2}\right) = \pm\sqrt{\frac{1 - \cos(\alpha)}{1 + \cos(\alpha)}} \quad \text{dove} \quad \alpha \neq \pi + 2k\pi, \quad k \in \mathbb{Z}$$

$$\sin(\alpha)\cos(\beta) = \frac{1}{2}[\sin(\alpha - \beta) + \sin(\alpha + \beta)]$$

$$\sin(\alpha) + \sin(\beta) = 2\sin\left(\frac{\alpha + \beta}{2}\right)\cos\left(\frac{\alpha - \beta}{2}\right)$$

$$\sin(\alpha) - \sin(\beta) = 2\cos\left(\frac{\alpha + \beta}{2}\right)\sin\left(\frac{\alpha - \beta}{2}\right)$$

$$\cos(\alpha) + \cos(\beta) = 2\cos\left(\frac{\alpha + \beta}{2}\right)\cos\left(\frac{\alpha - \beta}{2}\right)$$

$$\cos(\alpha) - \cos(\beta) = -2\sin\left(\frac{\alpha + \beta}{2}\right)\sin\left(\frac{\alpha - \beta}{2}\right)$$

$$\sin(\alpha + \beta) = \sin(\alpha)\cos(\beta) + \cos(\alpha)\sin(\beta)$$

$$\sin(\alpha - \beta) = \sin(\alpha)\cos(\beta) - \cos(\alpha)\sin(\beta)$$

$$\cos(\alpha + \beta) = \cos(\alpha)\cos(\beta) - \sin(\alpha)\sin(\beta)$$

$$\cos(\alpha - \beta) = \cos(\alpha)\cos(\beta) + \sin(\alpha)\sin(\beta)$$

$$\tan(\alpha + \beta) = \frac{\tan(\alpha) + \tan(\beta)}{1 - \tan(\alpha)\tan(\beta)} \quad \text{dove} \quad \alpha,\ \beta,\ \alpha + \beta \neq \frac{\pi}{2} + k\pi, \quad k \in \mathbb{Z}$$

$$\tan(\alpha - \beta) = \frac{\tan(\alpha) - \tan(\beta)}{1 + \tan(\alpha)\tan(\beta)} \quad \text{dove} \quad \alpha,\ \beta,\ \alpha - \beta \neq \frac{\pi}{2} + k\pi, \quad k \in \mathbb{Z}$$

$$\sin(2\alpha) = 2\sin(\alpha)\cos(\alpha)$$

$$\cos(2\alpha) = \cos^2(\alpha) - \sin^2(\alpha)$$

$$\tan(2\alpha) = \frac{2\tan(\alpha)}{1 - \tan^2(\alpha)} \quad \text{dove} \quad \alpha \neq \frac{\pi}{4} + k\frac{\pi}{2} \ \wedge \ \alpha \neq \frac{\pi}{2} + k\pi, \quad k \in \mathbb{Z}$$

$$\sin\left(\frac{\alpha}{2}\right) = \pm\sqrt{\frac{1 - \cos(\alpha)}{2}}$$