ANGOLI ASSOCIATI

Angoli associati

angoli complementari (I quadrante)	angoli che differiscono di 90° (II quadrante)
$sen\left(\frac{\pi}{2}-\alpha\right)=cos\ \alpha$	$sen\left(\frac{\pi}{2}+\alpha\right)=-cos\ \alpha$
$cos\left(\frac{\pi}{2}-\alpha\right)=sen\ \alpha$	$cos\left(\frac{\pi}{2}+\alpha\right)=sen\ \alpha$
$tg\left(\frac{\pi}{2}-\alpha\right)=cotg\ \alpha$	$tg\left(\frac{\pi}{2}+\alpha\right)=cotg\ \alpha$
$cotg\left(\frac{\pi}{2}-\alpha\right)=tag\ \alpha$	$cotg\left(\frac{\pi}{2}+\alpha\right)=tg\ \alpha$
angoli supplementari (II quadrante)	**angoli che differiscono di 180° (III quadrante)**
$sen\,(\pi-\alpha)=sen\,\alpha$	$sen\,(\pi+\alpha)=-sen\,\alpha$
$cos\,(\pi-\alpha)=-cos\,\alpha$	$cos\,(\pi+\alpha)=-cos\,\alpha$
$tg\,(\pi-\alpha)=-tg\,\alpha$	$tg\,(\pi+\alpha)=-tg\,\alpha$
$cotg\,(\pi-\alpha)=-cotg\,\alpha$	$cotg\,(\pi+\alpha)=-cotg\,\alpha$
angoli la cui somma è 270° (III quadrante)	**angoli che differiscono di 270° (IV quadrante)**
$sen\left(\frac{3}{2}\pi-\alpha\right)=-sen\,\alpha$	$sen\left(\frac{3}{2}\pi+\alpha\right)=-sen\,\alpha$
$cos\left(\frac{3}{2}\pi-\alpha\right)=-cos\,\alpha$	$cos\left(\frac{3}{2}\pi+\alpha\right)=cos\,\alpha$
$tg\left(\frac{3}{2}\pi-\alpha\right)=tg\,\alpha$	$tg\left(\frac{3}{2}\pi+\alpha\right)=-tg\,\alpha$
$cotg\left(\frac{3}{2}\pi-\alpha\right)=cotg\,\alpha$	$cotg\left(\frac{3}{2}\pi+\alpha\right)=-cotg\,\alpha$
angoli esplementari (IV quadrante)	**angoli opposti (IV quadrante)**
$sen\,(2\pi-\alpha)=-sen\,\alpha$	$sen\,(-\alpha)=-sen\,\alpha$
$cos\,(2\pi-\alpha)=cos\,\alpha$	$cos\,(-\alpha)=cos\,\alpha$
$tg\,(2\pi-\alpha)=-tg\,\alpha$	$tg\,(-\alpha)=-tg\,\alpha$
$cotg\,(2\pi-\alpha)=-cotg\,\alpha$	$cotg\,(-\alpha)=-cotg\,\alpha$

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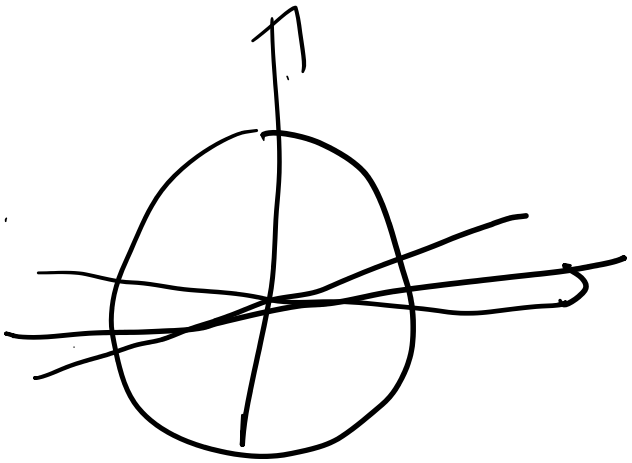
ANGOLI NOTEVOLI

Angolo		Seno	Coseno	Tangente	Cotangente
Radianti	Gradi				
0	0°	0	1	0	∞
$\frac{\pi}{6}$	30°	$\frac{1}{2}$	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{3}}{3}$	$\sqrt{3}$
$\frac{\pi}{4}$	45°	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{2}}{2}$	1	1
$\frac{\pi}{3}$	60°	$\frac{\sqrt{3}}{2}$	$\frac{1}{2}$	$\sqrt{3}$	$\frac{\sqrt{3}}{3}$
$\frac{\pi}{2}$	90°	1	0	∞	0
π	180°	0	-1	0	∞
$\frac{3\pi}{2}$	270°	-1	0	∞	0
2π	360°	0	1	0	∞



FORMULA FONDAMENTALE

$\rightarrow \sin^2(x) + \cos^2(x) = 1$

SOMMA E DIFFER. DEGLI ANGOLI (PROSTAFERESI)

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

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

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

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

FORMULE DI DUPLICAZIONE

FORMULE DI DUPLICAZIONE

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

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

$\tan\alpha = \dfrac{\sin\alpha}{\cos\alpha}$

TANGENTE

$$\tan(\alpha+\beta) = \frac{\sin(\alpha+\beta)}{\cos(\alpha+\beta)} \longrightarrow \tan(\alpha+\beta) = \frac{\frac{\sin\alpha}{\cos\alpha} + \frac{\sin\beta}{\cos\beta}}{1 - \frac{\sin\alpha\,\sin\beta}{\cos\alpha\,\cos\beta}}$$

$$\tan(\alpha-\beta) = \frac{\tan\alpha - \tan\beta}{1+\tan\alpha\,\tan\beta} \longrightarrow \tan(\alpha-\beta) = \frac{\tan\alpha + \tan(-\beta)}{1-\tan\alpha\,\tan(-\beta)}$$