

Formule goniometriche

Formule di addizione	$\sin(\alpha + \beta) = \sin\alpha \cos\beta + \cos\alpha \sin\beta$ $\cos(\alpha + \beta) = \cos\alpha \cos\beta - \sin\alpha \sin\beta$ $\tan(\alpha + \beta) = \frac{\tan\alpha + \tan\beta}{1 - \tan\alpha \tan\beta}$
Formule di sottrazione	$\sin(\alpha - \beta) = \sin\alpha \cos\beta - \cos\alpha \sin\beta$ $\cos(\alpha - \beta) = \cos\alpha \cos\beta + \sin\alpha \sin\beta$ $\tan(\alpha - \beta) = \frac{\tan\alpha - \tan\beta}{1 + \tan\alpha \tan\beta}$
Formule di duplicazione	$\sin 2\alpha = 2\sin\alpha \cos\alpha$ $\cos 2\alpha = \cos^2 \alpha - \sin^2 \alpha = 1 - 2\sin^2 \alpha = 2\cos^2 \alpha - 1$ $\tan 2\alpha = \frac{2\tan\alpha}{1 - \tan^2 \alpha}$
Formule di triplicazione	$\sin 3\alpha = 3\sin\alpha - 4\sin^3 \alpha$ $\cos 3\alpha = 4\cos^3 \alpha - 3\cos\alpha$ $\tan 3\alpha = \frac{3\tan\alpha - \tan^3 \alpha}{1 - 3\tan^2 \alpha}$
Formule di bisezione	$\sin \frac{\alpha}{2} = \pm \sqrt{\frac{1 - \cos\alpha}{2}}$ $\cos \frac{\alpha}{2} = \pm \sqrt{\frac{1 + \cos\alpha}{2}}$ $\tan \frac{\alpha}{2} = \pm \sqrt{\frac{1 - \cos\alpha}{1 + \cos\alpha}} = \frac{\sin\alpha}{1 + \cos\alpha} = \frac{1 - \cos\alpha}{\sin\alpha}$
Formule di prostaferesi	$\sin p + \sin q = 2\sin \frac{p+q}{2} \cos \frac{p-q}{2}$ $\sin p - \sin q = 2\cos \frac{p+q}{2} \sin \frac{p-q}{2}$ $\cos p + \cos q = 2\cos \frac{p+q}{2} \cos \frac{p-q}{2}$ $\cos p - \cos q = -2\sin \frac{p+q}{2} \sin \frac{p-q}{2}$
Formule di Werner	$\sin\alpha \sin\beta = \frac{1}{2} [\cos(\alpha - \beta) - \cos(\alpha + \beta)]$ $\cos\alpha \cos\beta = \frac{1}{2} [\cos(\alpha + \beta) + \cos(\alpha - \beta)]$ $\sin\alpha \cos\beta = \frac{1}{2} [\sin(\alpha + \beta) + \sin(\alpha - \beta)]$
Formule parametriche	$\sin\alpha = \frac{2t}{1+t^2} ; \quad \cos\alpha = \frac{1-t^2}{1+t^2} \quad \text{con} \quad t = \tan \frac{\alpha}{2}$