C) **Formule goniometriche.**

1) **Formule di addizione.**

$$\begin{cases} \operatorname{sen}(\alpha+\beta) = \operatorname{sen}\alpha\cos\beta + \operatorname{sen}\beta\cos\alpha \\ \cos(\alpha+\beta) = \cos\alpha\cos\beta - \operatorname{sen}\alpha\operatorname{sen}\beta \\ \operatorname{tg}(\alpha+\beta) = \dfrac{\operatorname{tg}\alpha + \operatorname{tg}\beta}{1-\operatorname{tg}\alpha\operatorname{tg}\beta} \end{cases}$$

2) **Formule di sottrazione**(1).

$$\begin{cases} \operatorname{sen}(\alpha-\beta) = \operatorname{sen}\alpha\cos\beta - \operatorname{sen}\beta\cos\alpha \\ \cos(\alpha-\beta) = \cos\alpha\cos\beta + \operatorname{sen}\alpha\operatorname{sen}\beta \\ \operatorname{tg}(\alpha-\beta) = \dfrac{\operatorname{tg}\alpha - \operatorname{tg}\beta}{1+\operatorname{tg}\alpha\operatorname{tg}\beta}\,. \end{cases}$$

3) **Formule di duplicazione.**

$$\begin{cases} \operatorname{sen}2\alpha = 2\operatorname{sen}\alpha\cos\alpha \\ \cos 2\alpha = \cos^2\alpha - \operatorname{sen}^2\alpha = 1 - 2\operatorname{sen}^2\alpha = 2\cos^2\alpha - 1 \\ \operatorname{tg}2\alpha = \dfrac{2\operatorname{tg}\alpha}{1-\operatorname{tg}^2\alpha}\,. \end{cases}$$

4) **Formule di triplicazione.**

$$\begin{cases} \operatorname{sen}3\alpha = 3\operatorname{sen}\alpha - 4\operatorname{sen}^3\alpha \\ \cos 3\alpha = 4\cos^3\alpha - 3\cos\alpha \\ \operatorname{tg}3\alpha = \dfrac{3\operatorname{tg}\alpha - \operatorname{tg}^3\alpha}{1-3\operatorname{tg}^2\alpha}\,. \end{cases}$$

5) **Formule di bisezione.**

$$\begin{cases} \operatorname{sen}\dfrac{\alpha}{2} = \pm\sqrt{\dfrac{1-\cos\alpha}{2}}\,,\quad \cos\dfrac{\alpha}{2} = \pm\sqrt{\dfrac{1+\cos\alpha}{2}}\,, \\ \operatorname{tg}\dfrac{\alpha}{2} = \pm\sqrt{\dfrac{1-\cos\alpha}{1+\cos\alpha}} = \dfrac{\operatorname{sen}\alpha}{1+\cos\alpha} = \dfrac{1-\cos\alpha}{\operatorname{sen}\alpha}\,. \end{cases}$$

6) **Formule di prostaferesi.**

$$\begin{cases} \operatorname{sen}p + \operatorname{sen}q = 2\operatorname{sen}\dfrac{p+q}{2}\cos\dfrac{p-q}{2} \\ \operatorname{sen}p - \operatorname{sen}q = 2\cos\dfrac{p+q}{2}\operatorname{sen}\dfrac{p-q}{2} \\ \cos p + \cos q = 2\cos\dfrac{p+q}{2}\cos\dfrac{p-q}{2} \\ \cos p - \cos q = -2\operatorname{sen}\dfrac{p+q}{2}\operatorname{sen}\dfrac{p-q}{2}\,. \end{cases}$$

7) **Formule di Werner.**

$$\begin{cases} \operatorname{sen}\alpha\operatorname{sen}\beta = \dfrac{1}{2}[\cos(\alpha-\beta) - \cos(\alpha+\beta)] \\ \cos\alpha\cos\beta = \dfrac{1}{2}[\cos(\alpha+\beta) + \cos(\alpha-\beta)] \\ \operatorname{sen}\alpha\cos\beta = \dfrac{1}{2}[\operatorname{sen}(\alpha+\beta) + \operatorname{sen}(\alpha-\beta)]. \end{cases}$$