

Scheda di lavoro: formule goniometriche

Formule di addizione e sottrazione:

$$\cos(\alpha \pm \beta) =$$

$$\sin(\alpha \pm \beta) =$$

Formule di duplicazione:

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

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

Formule di bisezione:

$$\cos 2\beta = \cos^2 \beta - \sin^2 \beta = (\quad) - \sin^2 \beta =$$

$$\rightarrow \boxed{\sin^2 \beta = \text{-----}}$$

$$\rightarrow \sin \beta = \pm \sqrt{\text{-----}}$$

$$\rightarrow * \sin \frac{\alpha}{2} = \pm \sqrt{\text{-----}}$$

$$\cos 2\beta = \cos^2 \beta - \sin^2 \beta = \cos^2 \beta - (\quad) =$$

$$\rightarrow \boxed{\cos^2 \beta = \text{-----}}$$

$$\rightarrow \cos \beta = \pm \sqrt{\text{-----}}$$

$$\rightarrow * \cos \frac{\alpha}{2} = \pm \sqrt{\text{-----}}$$

Formule parametriche:

$$\sin 2\beta = \frac{2\sin\beta \cdot \cos\beta}{1} = \frac{2\sin\beta \cdot \cos\beta}{\overbrace{\cos^2\beta} + \overbrace{\cos^2\beta}} = \frac{\overbrace{\cos^2\beta}}{\overbrace{\cos^2\beta} + \overbrace{\cos^2\beta}} = \text{-----}$$

$$\rightarrow * \sin \alpha = \text{-----}$$

$$\cos 2\beta = \frac{\cos^2\beta - \sin^2\beta}{1} = \frac{\cos^2\beta - \sin^2\beta}{\overbrace{\cos^2\beta} + \overbrace{\cos^2\beta}} = \frac{\overbrace{\cos^2\beta} - \overbrace{\cos^2\beta}}{\overbrace{\cos^2\beta} + \overbrace{\cos^2\beta}} = \text{-----}$$

$$\rightarrow * \cos \alpha = \text{-----}$$

* tali relazioni valgono per ogni angolo β , quindi anche per $\beta = \frac{\alpha}{2}$