

**Relaciones trigonométricas fundamentales.**

$$\operatorname{sen}(\alpha \pm \beta) = \operatorname{sen}\alpha \cdot \cos \beta \pm \cos \alpha \cdot \operatorname{sen}\beta$$

$$\cos(\alpha \pm \beta) = \cos \alpha \cdot \cos \beta \mp \operatorname{sen}\alpha \cdot \operatorname{sen}\beta$$

$$\operatorname{sen}\alpha \pm \operatorname{sen}\beta = 2\operatorname{sen}\frac{1}{2}(\alpha \pm \beta) \cos\frac{1}{2}(\alpha \mp \beta)$$

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

$$\cos \alpha - \cos \beta = -2\operatorname{sen}\frac{1}{2}(\alpha + \beta) \operatorname{sen}\frac{1}{2}(\alpha - \beta)$$

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

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

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