

aplicación de la trigonometría en el cuadrante I.
que el seno es función continua. Teorema de Pitágoras.
Bolímetros. Teorema de Pitágoras. Teorema de Pitágoras.

$$\boxed{\sin^2 \alpha + \cos^2 \alpha = 1}$$

$$\boxed{\operatorname{tg} \alpha = \frac{\sin \alpha}{\cos \alpha}}$$

$$\boxed{1 + \operatorname{tg}^2 \alpha = \frac{1}{\cos^2 \alpha}}$$

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

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

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

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

$$\operatorname{tg}(\alpha + \beta) = \frac{\operatorname{tg} \alpha + \operatorname{tg} \beta}{1 - \operatorname{tg} \alpha \cdot \operatorname{tg} \beta}$$

$$\operatorname{tg}(2\alpha) = \frac{2 \operatorname{tg} \alpha}{1 - \operatorname{tg}^2 \alpha}$$

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

$$\sin\left(\frac{\alpha}{2}\right) = \pm \sqrt{\frac{1 - \cos \alpha}{2}}$$

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

$$\cos\left(\frac{\alpha}{2}\right) = \pm \sqrt{\frac{1 + \cos \alpha}{2}}$$

$$\operatorname{tg}(\alpha - \beta) = \frac{\operatorname{tg} \alpha - \operatorname{tg} \beta}{1 + \operatorname{tg} \alpha \cdot \operatorname{tg} \beta}$$

$$\operatorname{tg}\left(\frac{\alpha}{2}\right) = \pm \sqrt{\frac{1 - \cos \alpha}{1 + \cos \alpha}}$$

$$\sec \alpha = \frac{1}{\cos \alpha}$$

$$\operatorname{cosec} \alpha = \frac{1}{\sin \alpha}$$

$$\cot \alpha = \frac{1}{\tan \alpha}$$