

Equivalentes trigonométricos

(u y v son funciones)

$$\operatorname{sen} u \sim u, \text{ cdo. } u \rightarrow 0$$

$$\operatorname{tg} u \sim u, \text{ cdo. } u \rightarrow 0$$

$$1 - \cos u \sim \frac{u^2}{2}, \text{ cdo. } u \rightarrow 0$$

$$1 - \cos u^n \sim \frac{u^{2n}}{2}, \text{ cdo. } u \rightarrow 0$$

$$1 - \cos^n u \sim n(1 - \cos u) \cdot 1^{n-1} \sim n \cdot \frac{u^2}{2}, \text{ cdo. } u \rightarrow 0$$

$$\frac{1}{1 + \cos u} \sim \frac{-2}{(u - \pi)^2}, \text{ cdo. } u \rightarrow \pi$$

$$\operatorname{Artg} u \sim u, \text{ cdo. } u \rightarrow 0$$

$$u \sim v \sim \square$$

$$\operatorname{sen} u - \operatorname{sen} v \sim \cos \square \cdot (u - v)$$

$$\cos u - \cos v \sim -\operatorname{sen} \square \cdot (u - v)$$

$$\operatorname{tg} u - \operatorname{tg} v \sim \sec^2 \square \cdot (u - v)$$

$$\operatorname{sh} u \sim u, \text{ cdo. } u \rightarrow 0$$

$$\operatorname{th} u \sim u, \text{ cdo. } u \rightarrow 0$$