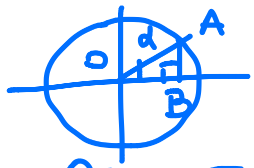
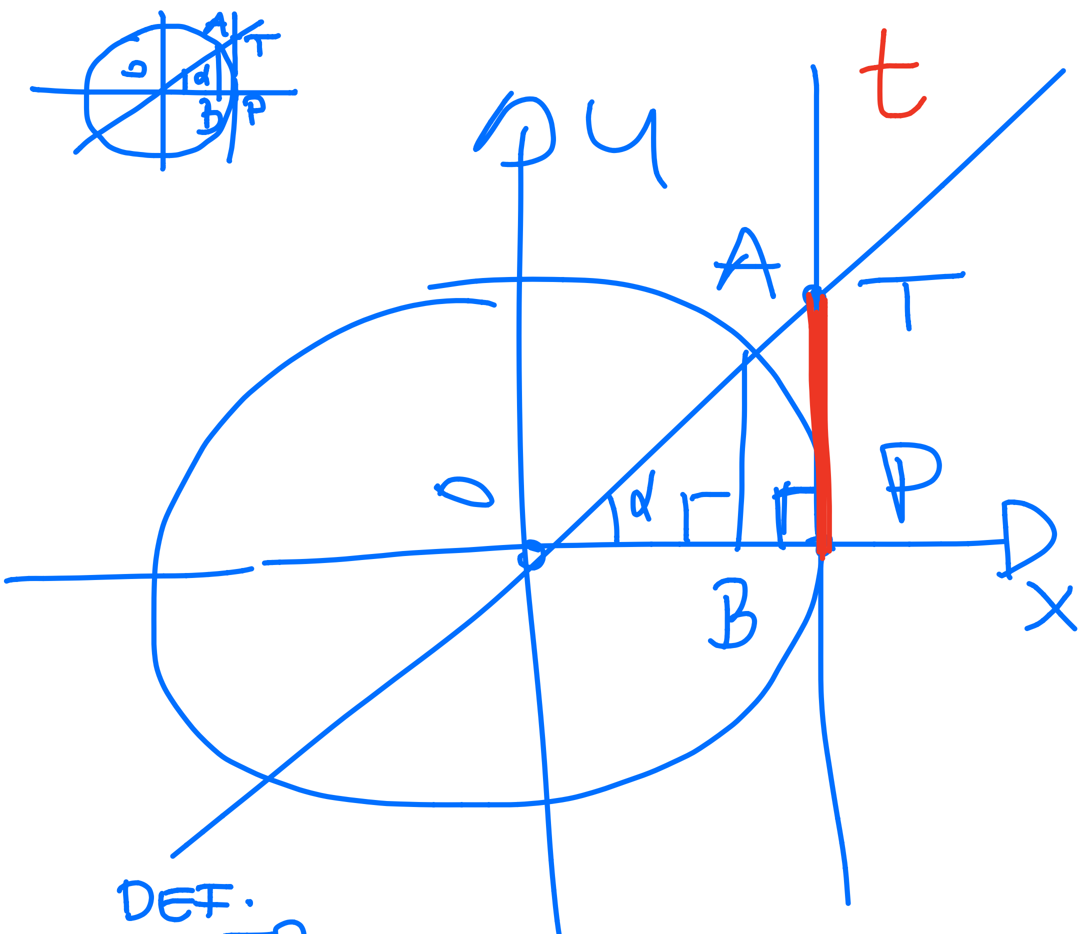


$\overline{OA}=1$

$O\hat{A}B$ RETTANGOLO $\Rightarrow \dfrac{\overline{AB}^2}{\overline{OA}^2}+\dfrac{\overline{OB}^2}{\overline{OA}^2}=\dfrac{\overline{OA}^2}{\overline{OA}^2}$ $\quad OA\neq 0$

$$\left(\frac{AB}{OA}\right)^2+\left(\frac{OB}{OA}\right)^2=1$$

1° ID. FOND. GON. $\quad \boxed{\mathrm{sen}^2\alpha+\cos^2\alpha=1}$



DEF.

$$\mathrm{tg}\,\alpha=\frac{TP}{OP}$$

$A\hat{O}B \sim T\hat{O}P$?

$$\frac{TP}{R} : \frac{OP}{R} = \frac{AB}{R} : \frac{OB}{R}$$

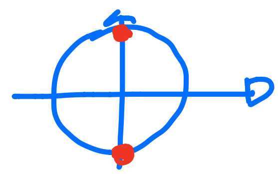
$$tg\alpha : 1 = sen\alpha : cos\alpha$$

2° REL. FOND. GON.

$$\boxed{tg\alpha = \frac{sen\alpha}{cos\alpha}}$$

$$sen^2\alpha + cos^2\alpha = 1$$

$cos^2\alpha \neq 0 \quad \alpha \neq \frac{\pi}{2} \wedge \alpha \neq \frac{3\pi}{2}$



$$\frac{sen^2\alpha}{cos^2\alpha} + \frac{cos^2\alpha}{cos^2\alpha} = \frac{1}{cos^2\alpha}$$

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

$$\boxed{cos^2\alpha = \frac{1}{1+tg^2\alpha}} \qquad cos\alpha = \pm\frac{1}{\sqrt{1+tg^2\alpha}}$$

$$sen^2\alpha = 1 - cos^2\alpha = 1 - \frac{1}{1+tg^2\alpha} = \frac{\cancel{1}+tg^2\alpha-\cancel{1}}{1+tg^2\alpha}$$

$$\boxed{sen^2\alpha = \frac{tg^2\alpha}{1+tg^2\alpha}} \qquad sen\alpha = \pm\frac{tg\alpha}{\sqrt{1+tg^2\alpha}}$$

Trovare $\operatorname{sen}\alpha$ e $\cos\alpha$ sapendo che $\operatorname{tg}\alpha = -\frac{1}{3}$

e che $\alpha \in 4°$ QUADR.

$$\operatorname{sen}^2\alpha = \frac{\frac{1}{9}}{1+\frac{1}{9}} = \frac{\frac{1}{9}}{\frac{10}{9}} = \frac{1}{10} \qquad \operatorname{sen}\alpha = -\frac{1}{\sqrt{10}} = -\frac{\sqrt{10}}{10}$$

$$\cos^2\alpha = \frac{1}{1+\frac{1}{9}} = \frac{1}{\frac{10}{9}} = \frac{9}{10} \qquad \cos\alpha = +\frac{3}{\sqrt{10}} = \frac{3\sqrt{10}}{10}$$