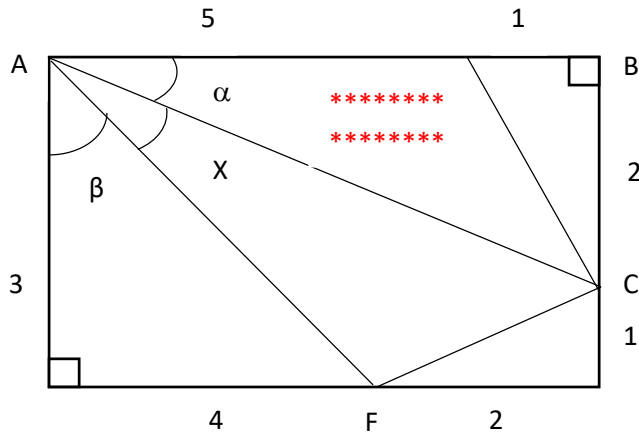


Trigo 3

We want to prove $\operatorname{tg} x = \frac{1}{3}$

Given: Triangle ABC and AFC



$$\operatorname{tg} \alpha = \frac{2}{6} = \frac{1}{3}$$

$$\operatorname{tg} \beta = \frac{4}{3}$$

$$(AF)^2 = 3^2 + 4^2 \Rightarrow AF = 5$$

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

$$\operatorname{tg} (\alpha + \beta) = \frac{\frac{1}{3} + \frac{4}{3}}{1 - \frac{4}{9}} = \frac{\frac{5}{3}}{\frac{5}{9}} = \frac{5}{3} \cdot \frac{9}{5} = 3$$

$$x = 90 - (\alpha + \beta)$$

$$\operatorname{tg} x = \operatorname{tg}[90 - (\alpha + \beta)] = \operatorname{ctg} (\alpha + \beta) = \frac{1}{3}$$

$$\operatorname{tg} x = \frac{1}{3}$$

$$\operatorname{tg} \alpha = \frac{1}{3} \Rightarrow x = \alpha$$