

$$4) \quad 2 \operatorname{tg} x - 3 \operatorname{cotg} x - 1 = 0$$

$$2 \operatorname{tg} x - \frac{3}{\operatorname{tg} x} - 1 = 0$$

$$\frac{2 \operatorname{tg} x}{1} - \frac{3}{\operatorname{tg} x} - 1 = 0$$

$$2 \operatorname{tg}^2 x - \operatorname{tg} x - 3 = 0 \Rightarrow \text{ecuación cuadrática}$$

$$a = 2$$

$$b = -1$$

$$c = -3$$

$$x_1 = \frac{1 + \sqrt{1 + 24}}{4} \Rightarrow x_1 = \frac{3}{2}$$

$$x_2 = \frac{1 - \sqrt{25}}{4} \Rightarrow x_2 = -1$$

$$\operatorname{tg} x_1 = \frac{3}{2} \Rightarrow x_1 = \operatorname{arctg}\left(\frac{3}{2}\right) \Rightarrow x_1 = 56,31^\circ$$

$$x_2 = \operatorname{arctg}(-1) \Rightarrow x_2 = -45^\circ$$

$$x_1 = 56,31^\circ + 180^\circ \cdot k$$

$$x_2 = 135^\circ + 180^\circ \cdot k$$

