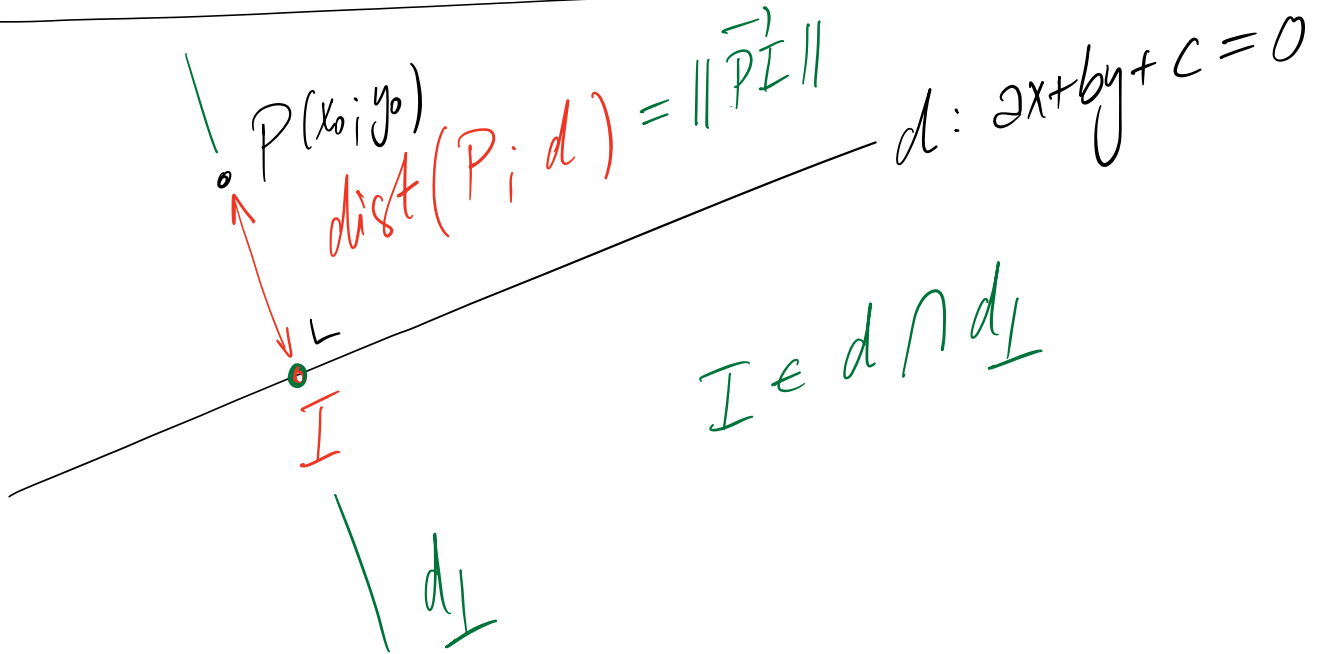


Distance d'un point P à une droite d :

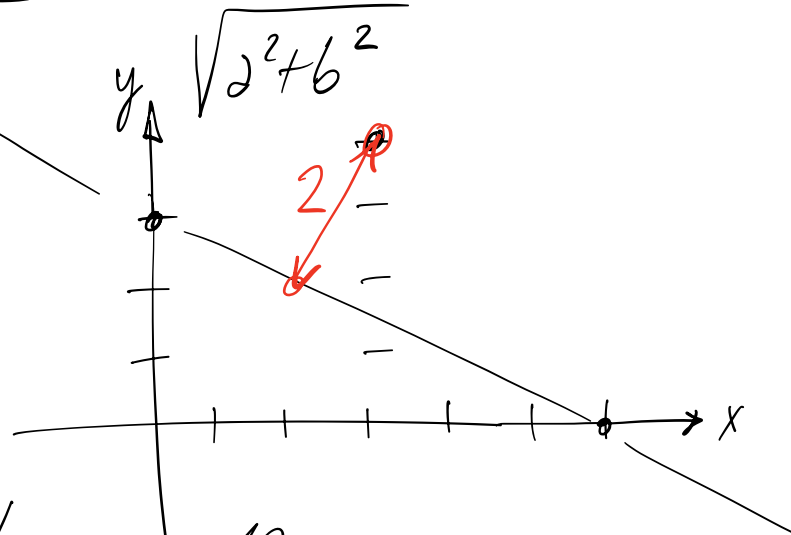


$$\text{dist}(P(x_0, y_0); d) = \frac{|a \cdot x_0 + b \cdot y_0 + c|}{\sqrt{a^2 + b^2}}$$

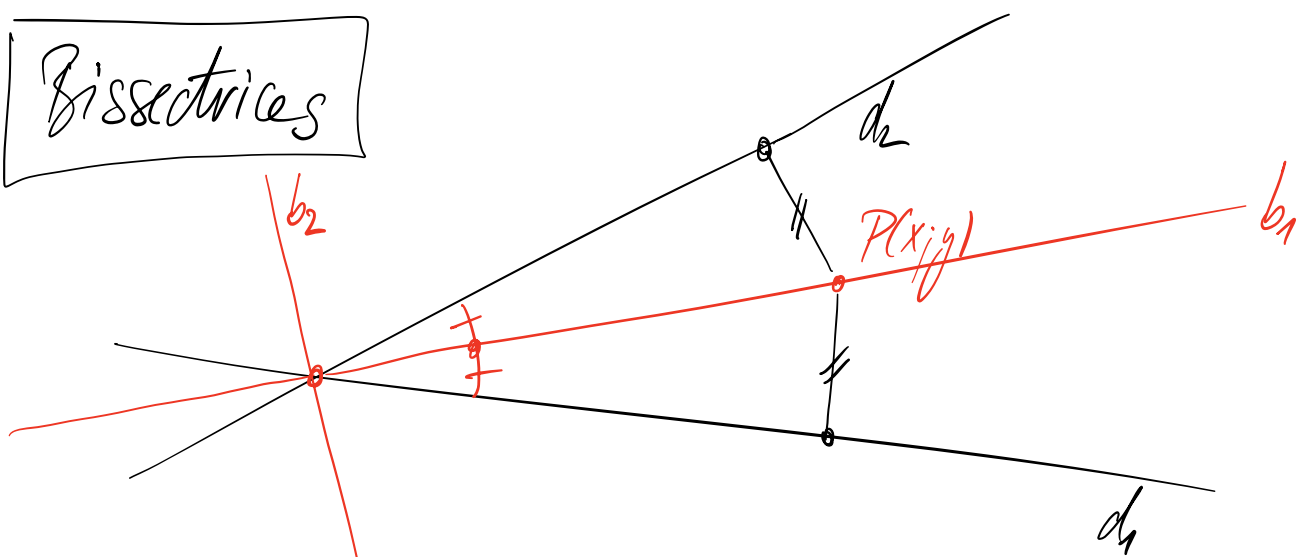
Exemple: $P(3; 4)$

$$d: 2x + 4y - 12 = 0$$

$$\text{dist}(P; d) = \frac{|2 \cdot 3 + 4 \cdot 4 - 12|}{\sqrt{2^2 + 4^2}} = \frac{10}{5} = 2$$



Bissectrices



$$d_1: x + 3y - 4 = 0$$

$$d_2: 2x + 2y + 5 = 0$$

$$\frac{|x + 3y - 4|}{\sqrt{1 + 3^2}} = \frac{|2x + 2y + 5|}{\sqrt{2^2 + 2^2}}$$

$$\Rightarrow \frac{x + 3y - 4}{\sqrt{10} \approx 3,16} = \frac{2x + 2y + 5}{\sqrt{8} \approx 2,82}$$

$$\Leftrightarrow 2,82x + 8,46y - 11,28 = 6,32x + 6,32y + 15,8$$

$$0 = 3,52x - 2,14y + 27,08 \quad b_1$$

$$\Rightarrow \frac{x + 3y - 4}{\sqrt{10}} = - \frac{2x + 2y + 5}{\sqrt{8}}$$

$$\Leftrightarrow 2,82x + 8,46y - 11,28 = -6,32x - 6,32y - 15,8$$

$$\Leftrightarrow \boxed{9,14x + 14,78y + 4,52 = 0} \quad b_2$$

$$\boxed{\frac{a_1x + b_1y + c_1}{\sqrt{a_1^2 + b_1^2}} = \pm \frac{a_2x + b_2y + c_2}{\sqrt{a_2^2 + b_2^2}}}$$

$$P(2; -1) \quad d: 4x + 3y + 10 = 0$$

$$\begin{aligned} \text{dist.}(P; d) &= \frac{|4 \cdot 2 + 3 \cdot (-1) + 10|}{\sqrt{4^2 + 3^2}} = \frac{|8 - 3 + 10|}{\sqrt{16 + 9}} \\ &= \frac{|15|}{\sqrt{25}} = \frac{15}{5} = 3 \end{aligned}$$