

Geradengleichung  
ermitteln

I

Geradengleichung  
( $x_1 \neq x_2$ )

$$\frac{y-y_1}{y_2-y_1} = \frac{x-x_1}{x_2-x_1}$$

$$y-y_1 = (x-x_1) \frac{y_2-y_1}{x_2-x_1}$$

$$y = x \left( \frac{y_2-y_1}{x_2-x_1} \right) - x_1 \left( \frac{y_2-y_1}{x_2-x_1} \right) + y_1$$

$$y - x \left( \frac{y_2-y_1}{x_2-x_1} \right) + x_1 \left( \frac{y_2-y_1}{x_2-x_1} \right) - y_1 = 0$$

$$Ax + By + C = 0$$

$$3. \quad A = -\frac{y_2-y_1}{x_2-x_1} \quad \left| \begin{array}{l} x_2 \neq x_1 \end{array} \right.$$

$$B = 1$$

$$C = x_1 \left( \frac{y_2-y_1}{x_2-x_1} \right) - y_1$$

$$Ax + C = 0$$

$$Ax = -C$$

$$x = -\frac{C}{A}$$

$$1. \quad A = 1$$

$$B = 0$$

$$C = -x$$

$$2. \quad A = 0$$

$$B = 1$$

$$C = -y$$

Geradengleichungen:

Gerade 1  $A_1x + B_1y + C_1 = 0$

Gerade 2  $A_2x + B_2y + C_2 = 0$

1. Geraden nicht parallel

$$\begin{vmatrix} A_1 & B_1 \\ A_2 & B_2 \end{vmatrix} \neq 0 =$$

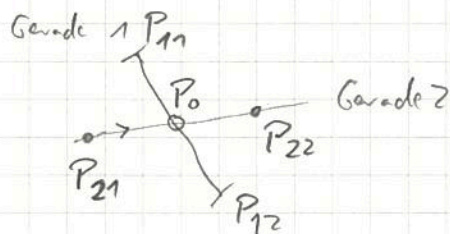
$$\downarrow A_1 \cdot B_2 - A_2 \cdot B_1 \neq 0$$

2. Schnittpunkt  $P_0$

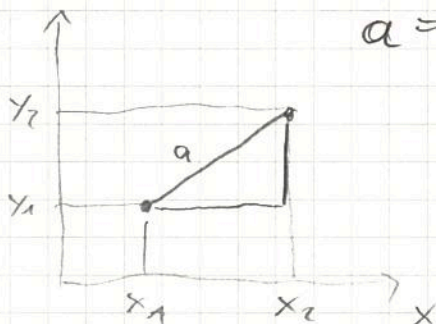
$$x_0 = \frac{\begin{vmatrix} B_1 & C_1 \\ B_2 & C_2 \end{vmatrix}}{\begin{vmatrix} A_1 & B_1 \\ A_2 & B_2 \end{vmatrix}}$$

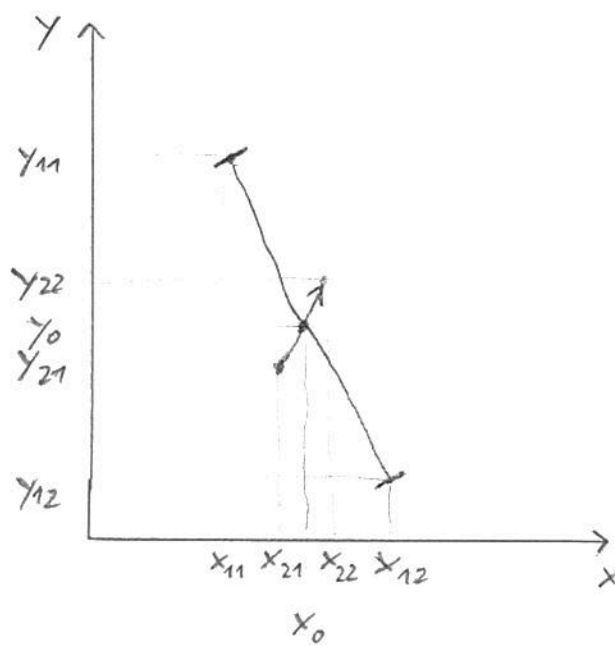
$$y_0 = \frac{\begin{vmatrix} C_1 & A_1 \\ C_2 & A_2 \end{vmatrix}}{\begin{vmatrix} A_1 & B_1 \\ A_2 & B_2 \end{vmatrix}}$$

3. Abstand zweier Punkte



$$a = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$





$$x_2 > x_1, y_2 > y_1$$

