

$$A_x x + A_y y = P_x$$

$$B_x x + B_y y = P_y$$

solve for y on first

$$A_x x + B_x y = P_x$$

$$B_x y = -A_x x + P_x$$

$$y = \frac{-A_x x + P_x}{B_x}$$

substitute y in second

$$A_y x + B_y y = P_y$$

$$A_y x + B_y \left(\frac{-A_x x + P_x}{B_x} \right) = P_y$$

solve for x

$$A_y x + B_y \left(\frac{-A_x x + P_x}{B_x} \right) = P_y$$

$$A_y x + B_y \left(\frac{-A_x x}{B_x} + \frac{P_x}{B_x} \right) = P_y$$

$$A_y x + \left(\frac{-A_x B_y x}{B_x} + \frac{P_x B_y}{B_x} \right) = P_y$$

$$\frac{A_y B_x x}{B_x} + \frac{-A_x B_y x}{B_x} + \frac{P_x B_y}{B_x} = P_y$$

$$\frac{A_y B_x x - A_x B_y x + P_x B_y}{B_x} = P_y$$

$$A_y B_x x - A_x B_y x + P_x B_y = P_y B_x$$

$$A_y B_x x - A_x B_y x = P_y B_x - P_x B_y$$

$$x(A_y B_x - A_x B_y) = P_y B_x - P_x B_y$$

$$x = \frac{P_y B_x - P_x B_y}{A_y B_x - A_x B_y}$$

final equations

$$x = \frac{P_y B_x - P_x B_y}{A_y B_x - A_x B_y}$$

$$y = \frac{-A_x x + P_x}{B_x}$$