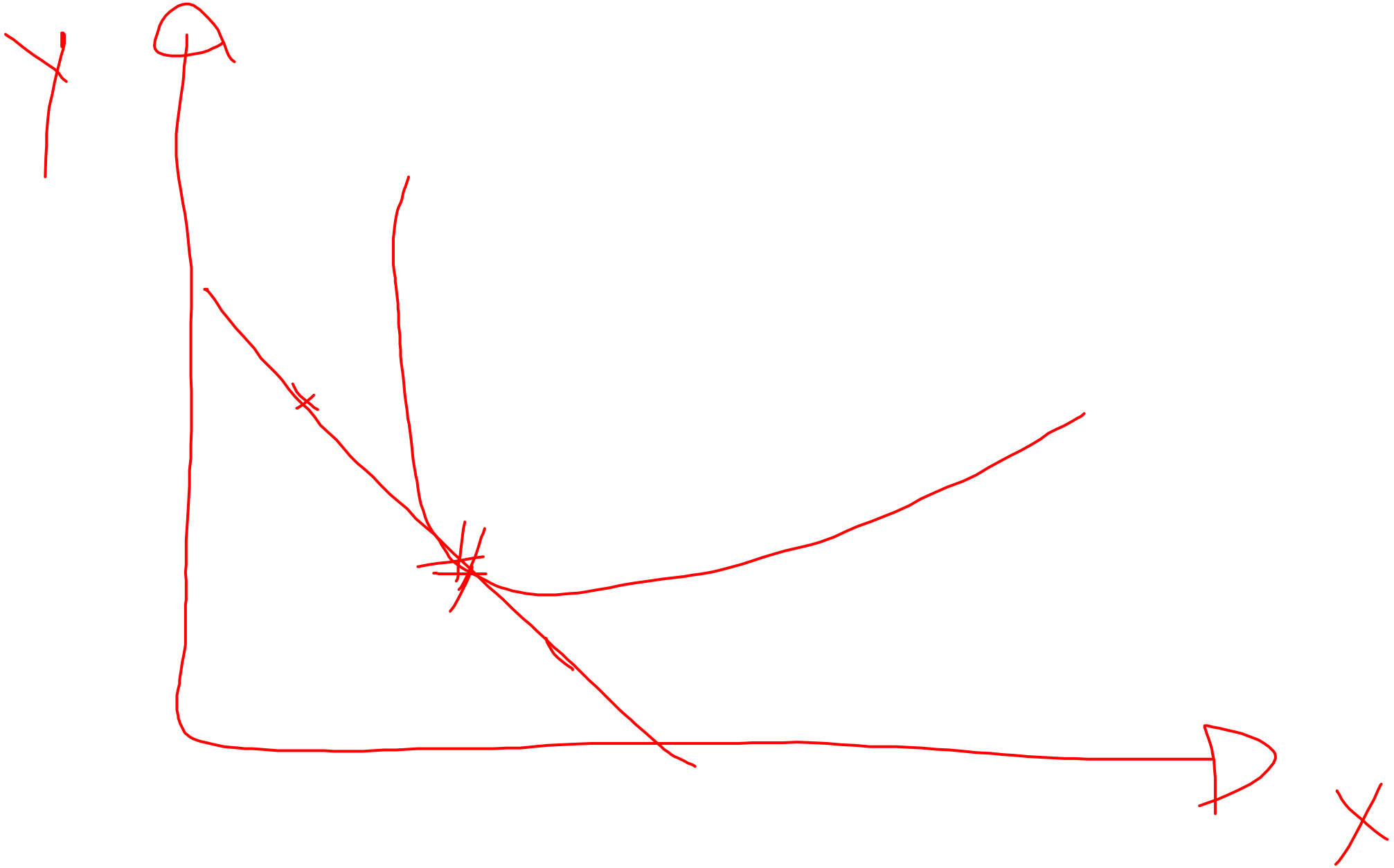
Y
X

$$I = P_x X + P_y Y$$

$$m = P_1 X_1 + P_2 X_2$$

$$m = \sum_{i=1}^{n} P_i X_i = \vec{P} \vec{X}$$

$$U(B,F) = B^{\frac{1}{2}} F^{\frac{1}{2}}$$

$$MU_B = \frac{\partial U(\cdot)}{\partial B} = \frac{1}{2} B^{-\frac{1}{2}} F^{\frac{1}{2}}$$

$$MU_F = \frac{\partial U(\cdot)}{\partial F} = \frac{1}{2} B^{\frac{1}{2}} F^{-\frac{1}{2}}$$

$$20 = 5B + 2F$$

$$20 - 2F = 5B + 2F - 2F$$

$$\frac{20}{5} - \frac{2}{5}F = \frac{5}{5}B$$

$$\boxed{B = 4 - \frac{2}{5}F}$$

$$x_i^*(\vec{p}, m) = \frac{\alpha_i}{\sum_j \alpha_j} \frac{m}{p_i}$$

$$U(x_1, x_2) = x_1 + x_2$$

$$\boxed{x_2 = U - x_1}$$