

$$\omega = (\bar{R}, 0)$$

TIME ENDOWMENT = $\bar{R} = 24$

$$u(R, C) = R^{1/3} \cdot C^{2/3}$$

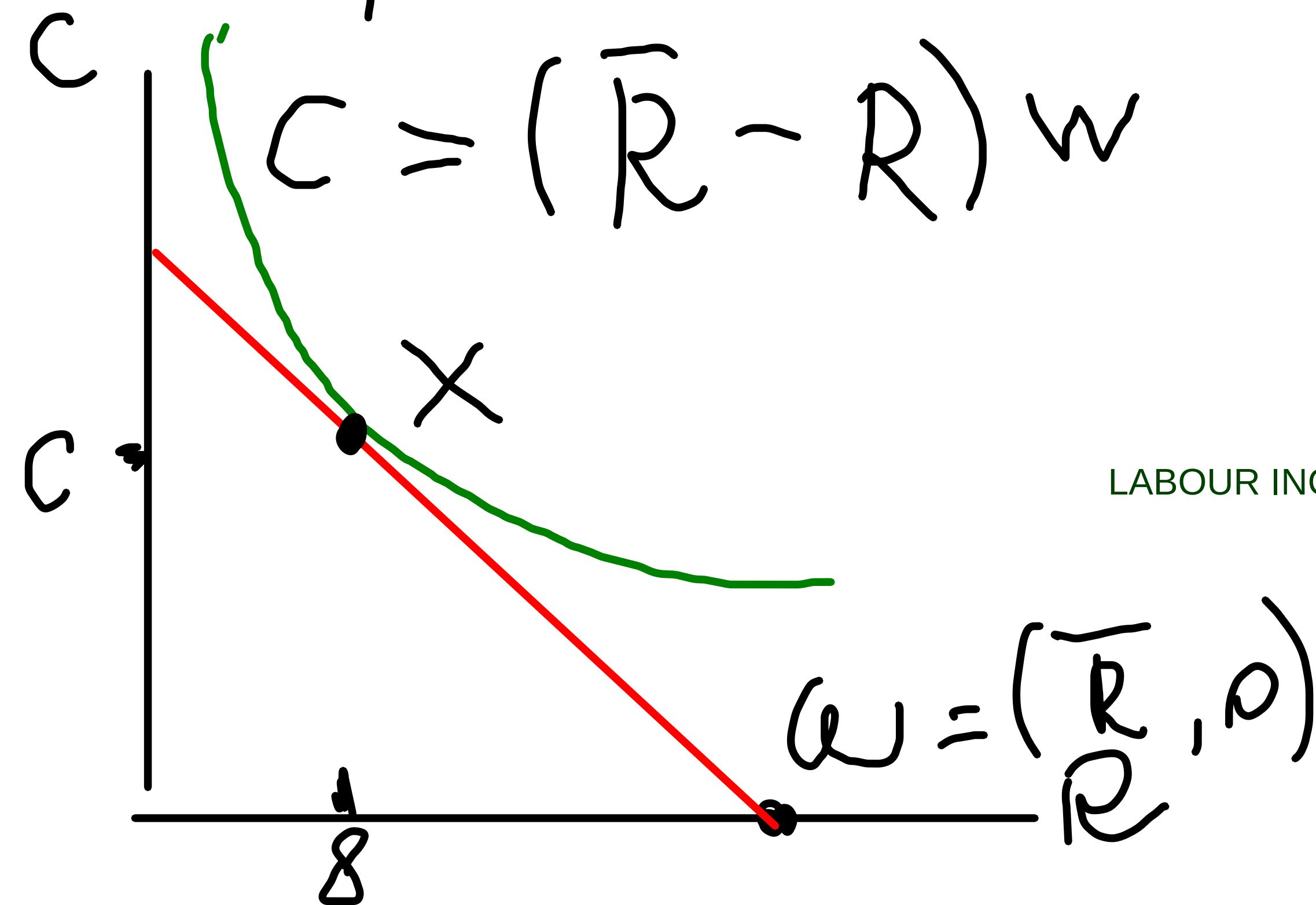
$$\frac{p_c}{p_r} = 1$$

$$\omega_1 p_1 + \omega_2 p_2 = \bar{R} \cdot W = RW + C \cdot \frac{p_c}{p_r}$$

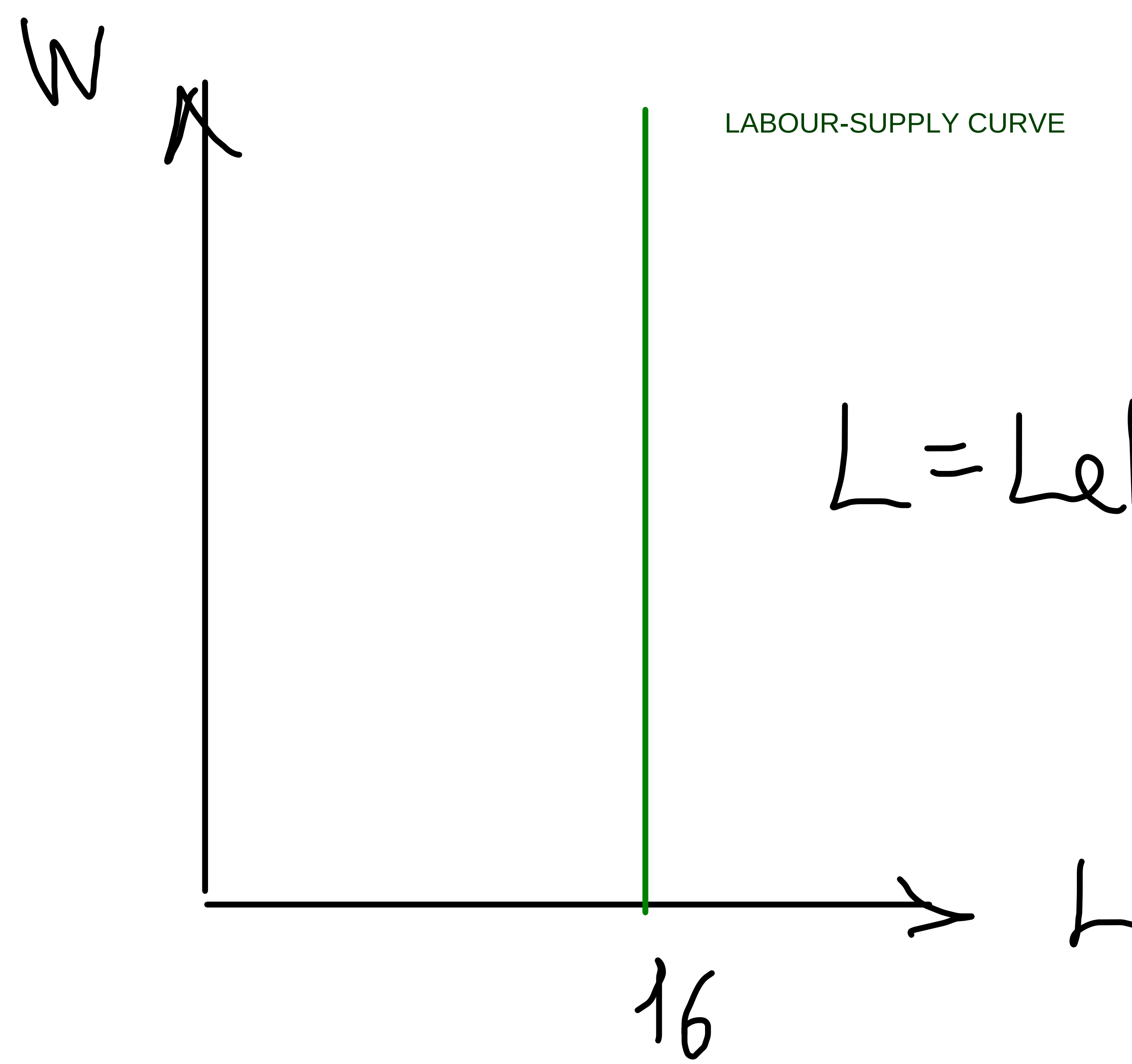
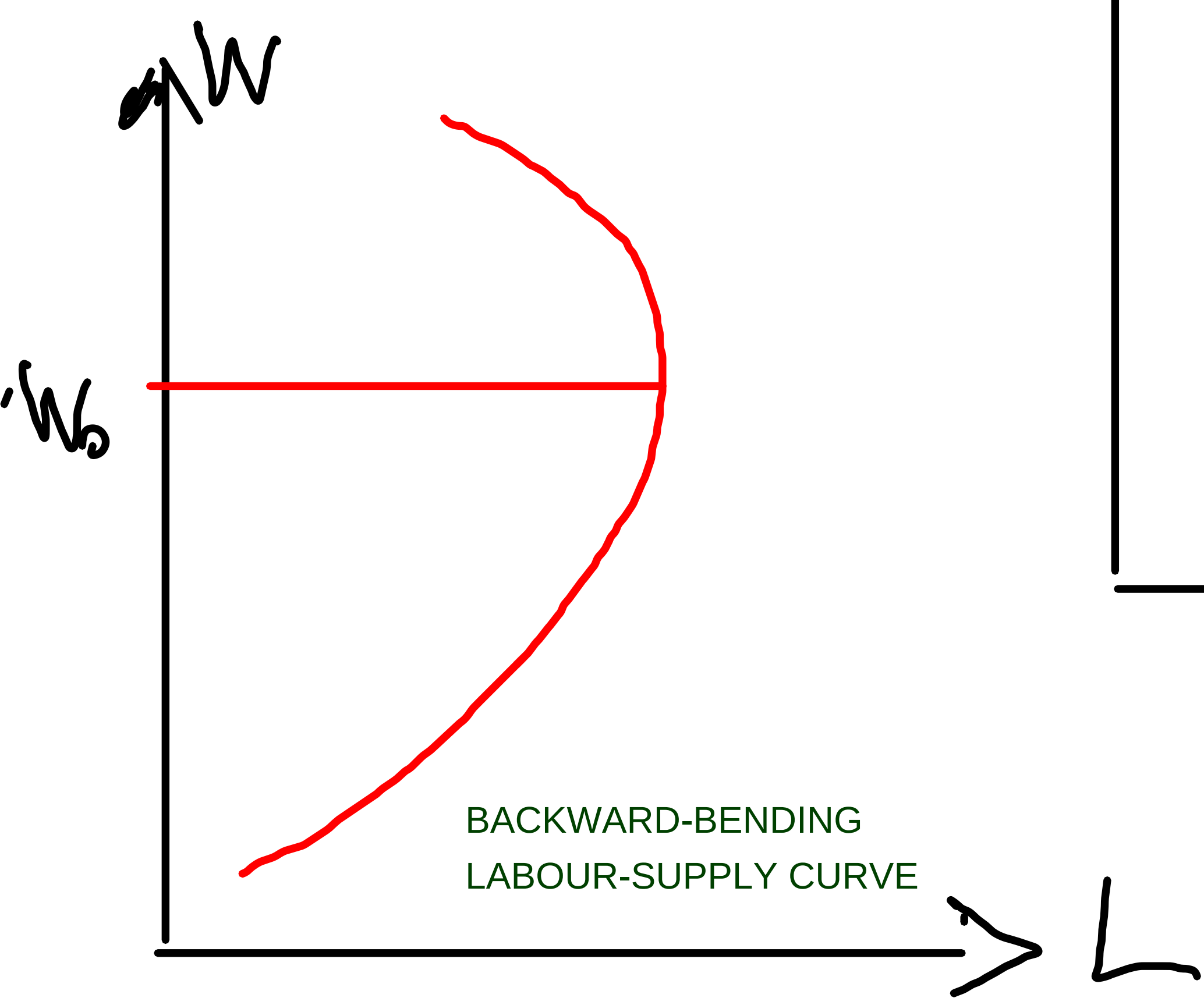
$$C = (\bar{R} - R)W$$

$$R = \frac{1}{3} \frac{\bar{R}W}{W} = 8$$

LABOUR INCOME = $(\bar{R} - R) \cdot W = (24 - 8) = 16W$



$$(w_1 - \bar{x}_1)$$



$$L = \bar{R} - R$$

$L = \text{Labour supply}$

$$u = x_1 \cdot x_2$$

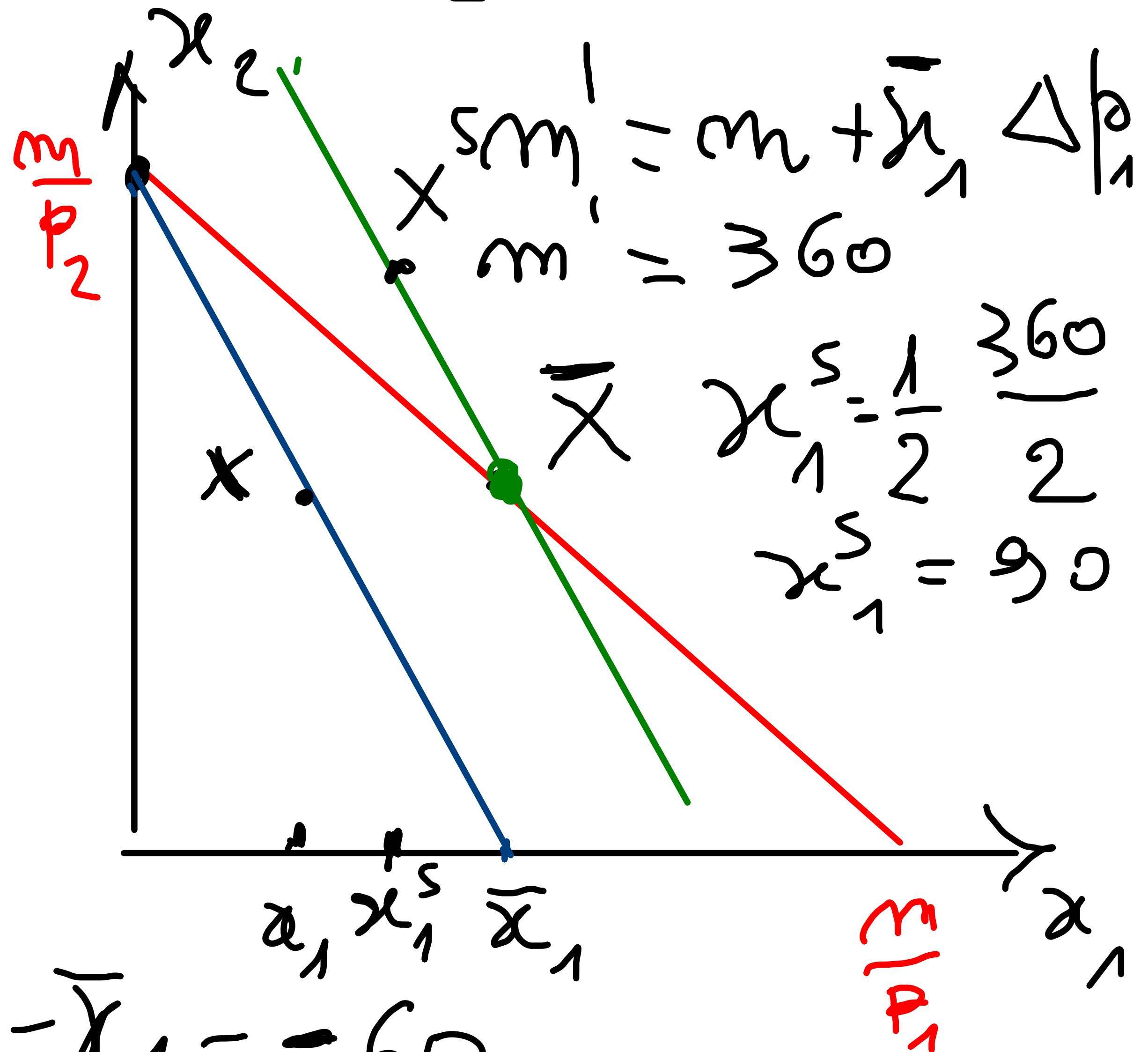
$$p_1 = 1 \quad p_2 = 1 \quad m = 240$$

$$\Delta p_1 = 1 \quad p_1' = 2$$

$$(x_1 \cdot x_2)^{1/2} = x_1^{1/2} \cdot x_2^{1/2}$$

$$\bar{x}_1 = \frac{1}{2} \frac{m}{p_1} = 120 \quad \bar{x}_2 = 120$$

$$x_1 = \frac{1}{2} \cdot \frac{m}{p_1'} = 60 \quad \Delta x_1 = x_1 - \bar{x}_1 = -60$$



$$\Delta x_1^S = x_1^S - \overline{x}_1 = 90 - 120 = -30$$

$$\Delta x_1^a = x_1 - x_1^S = 60 - 90 = -30$$

$$U(x_1, x_2) = x_1 + 2x_2$$

$$p_1 = 1 \quad p_2 = 1 \quad p'_1 = \frac{1}{3} \quad \frac{p_1}{p'_1} = 1$$

$$\bar{X} = (0, 120)$$

$$\bar{X} \quad m' = m + \bar{x}_1 \Delta p_1$$

$$m' = m$$

$$\frac{p'_1}{p_2} = \frac{1}{3} < \frac{MU_1}{MU_2}$$

$$\bar{x}_1 = 0$$

$$m = 120$$

$$x_1 - \bar{x}_1 = x_1^s - \bar{x}_1$$

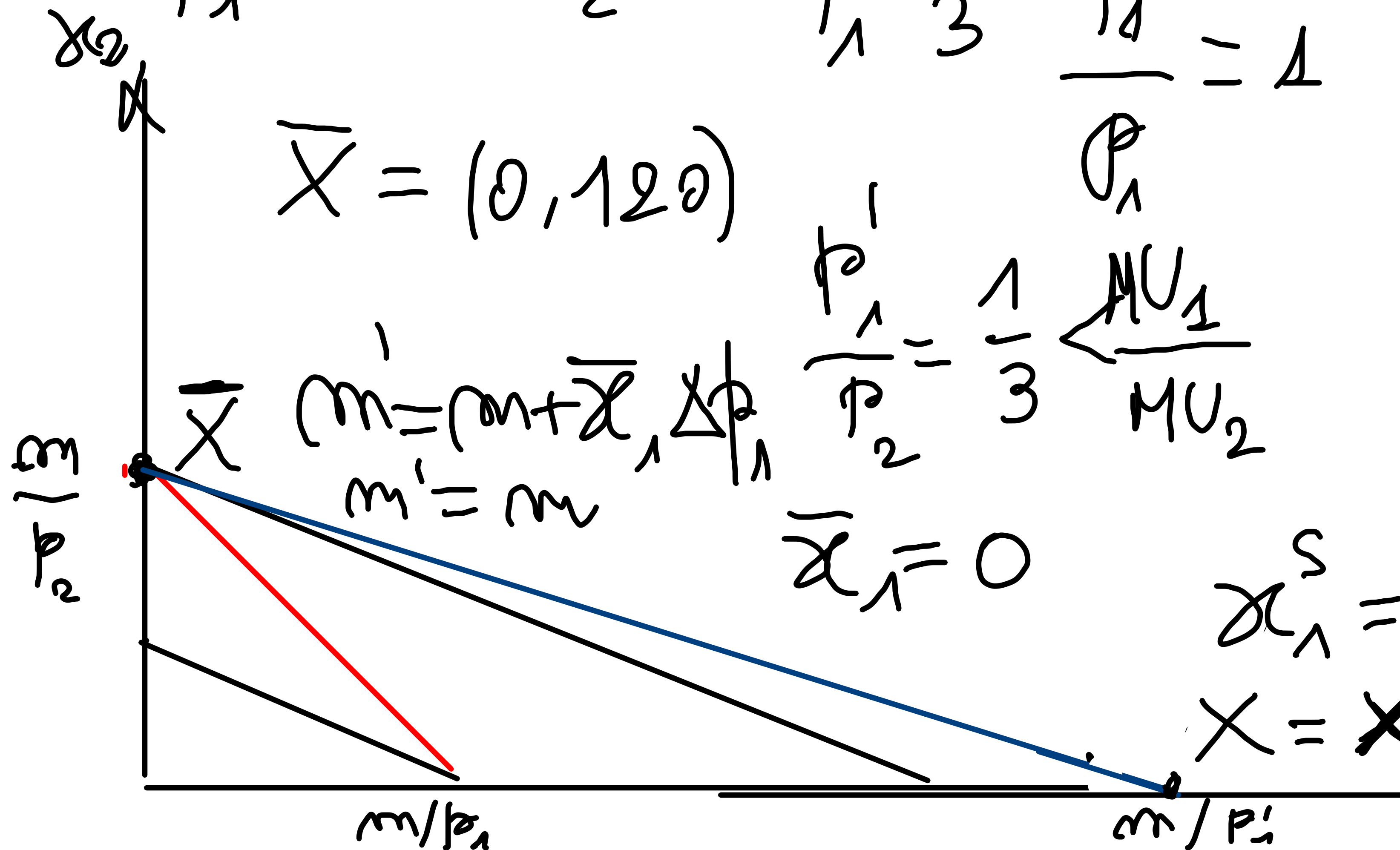
$$\frac{MU_1}{MU_2} = \frac{1}{2}$$

$$\frac{MU_2}{p_2} = 2 > 1 = \frac{MU_1}{p_1}$$

$$x_1^s = x_1 = \frac{120}{1/3} = 360$$

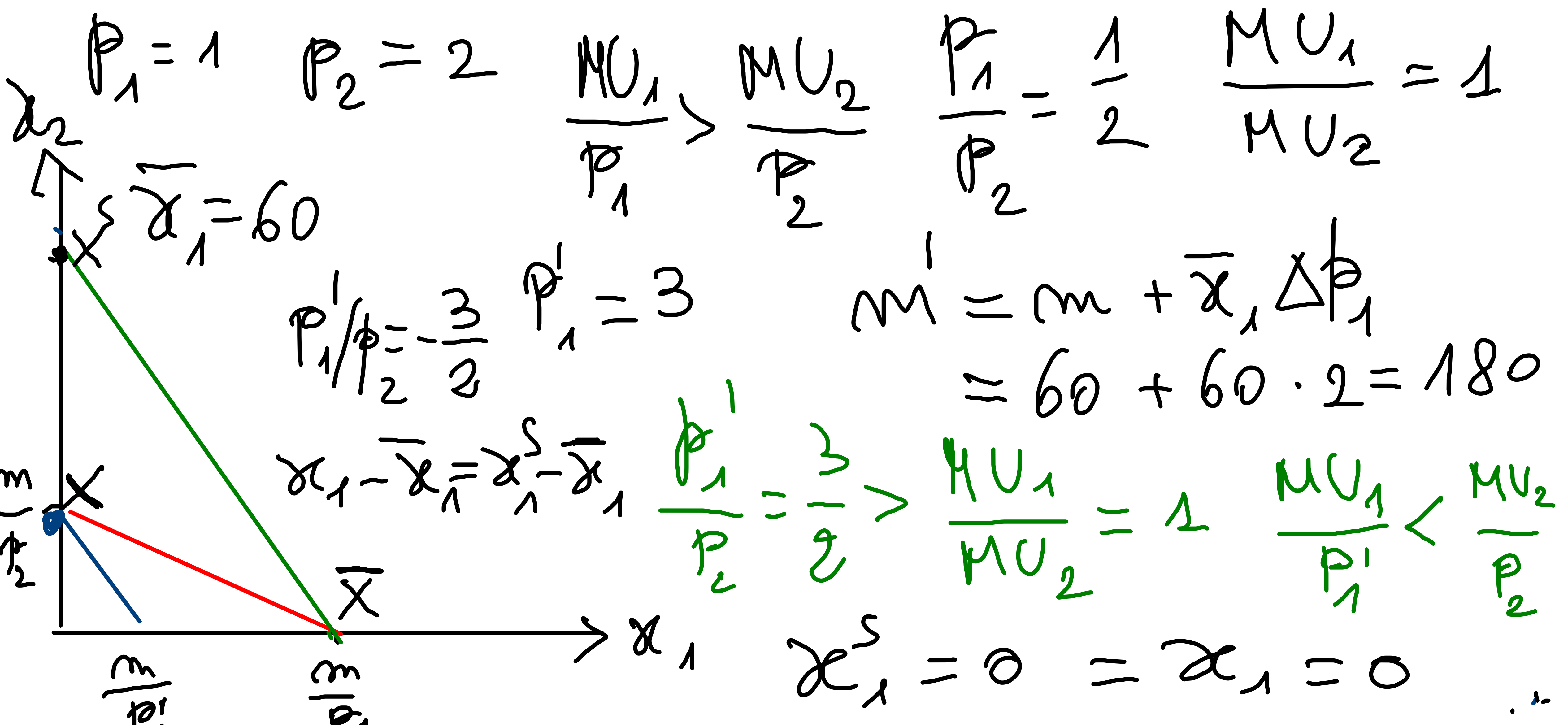
$$X = X^s$$

$$x_1 = x_1^s$$



SINCE PRICE CHANGE $p_1' - p_1$ IS CAUSING SUBSTITUTION OF ONE GOOD FOR ANOTHER
 IN THE OPTIMUM BUNDLE, THE CHANGE IN DEMAND IS ENTIRELY EXPLAINED BY SUBSTITUTION EFFECT

$$U(x_1, x_2) = x_1 + x_2 \quad m = 60$$



$$u(x_1, x_2) = 3x_1 + x_2 \quad p_1 = 2 \quad p_2 = 1$$

$$m = 60$$

$$|MRS| = 3 > \frac{p_1}{p_2} = 2$$

$$\bar{x} = (30, 0)$$

DETERMINE SUBSTITUTION AND INCOME EFFECT

CAUSED BY

$$\Delta p_1 = -1$$

$$p'_1 = 1$$

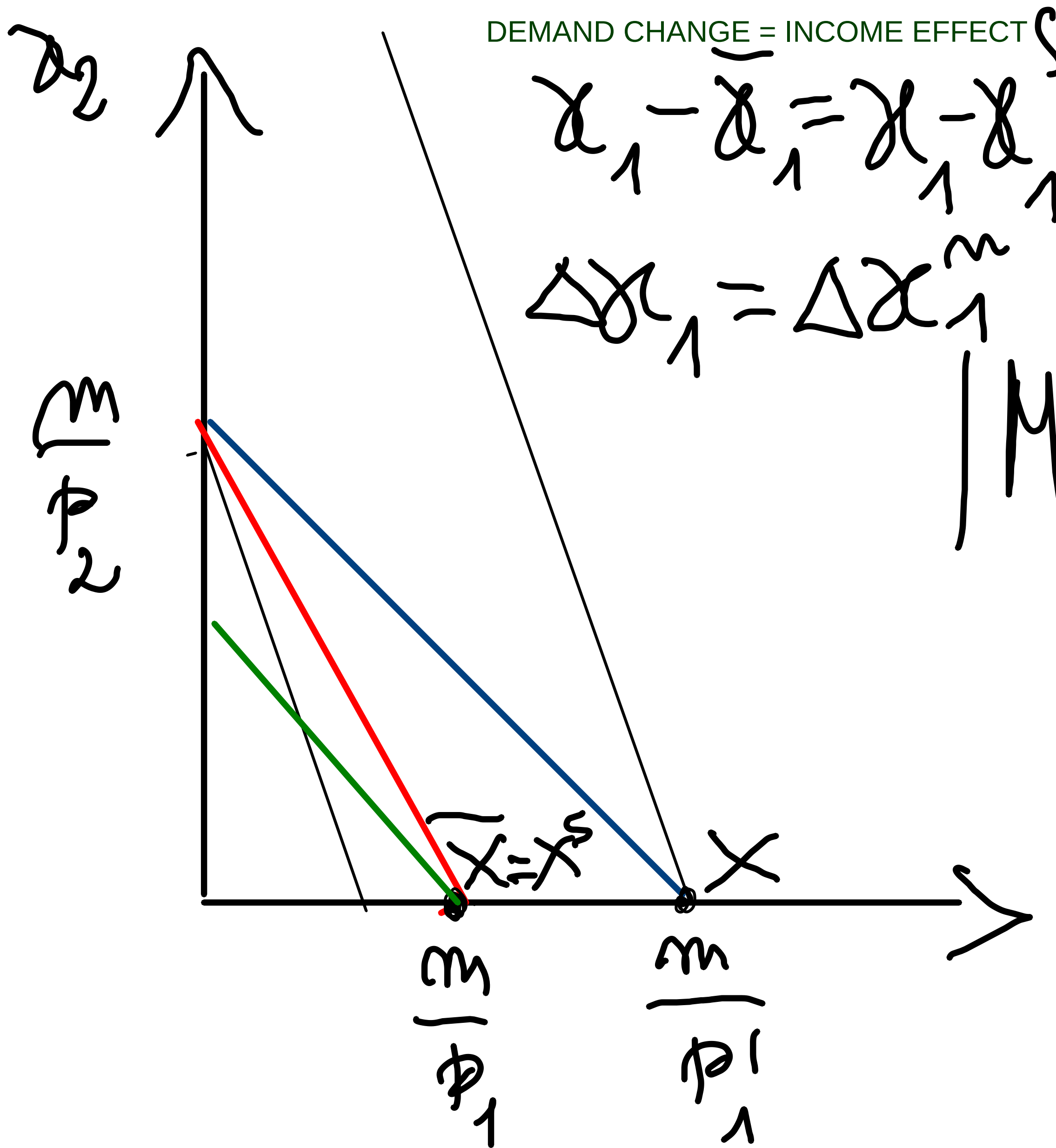
$$p_2$$

$$|MRS| = 3 > \frac{p'_1}{p_2} = 1$$

$$x = (60, 0)$$

$$x_1 - \bar{x}_1 = +30$$

$$m' = m + \bar{x}_1 \cdot \Delta p_1 = 60 - 30 = 30$$



$$x_1 - \bar{x}_1 = x_1 - x_1^S \quad m = 60$$

$$p_1 = 2 \quad p_1' = 1$$

$$\Delta x_1 = \Delta x_1^m$$

$$|MRS| = \frac{MU_1}{MU_2} = 3$$

$$\frac{p_1'}{p_1} = 1$$

$$\bar{x} = x^S$$

$$x_1$$

$$\frac{MU_1}{p_1'} > \frac{MU_2}{p_2}$$

SINCE PRICE CHANGE $p_1' - p_1$ IS NOT CAUSING SUBSTITUTION OF ONE GOOD FOR ANOTHER IN THE OPTIMUM BUNDLE, THE CHANGE IN DEMAND IS ENTIRELY EXPLAINED BY INCOME EFFECT