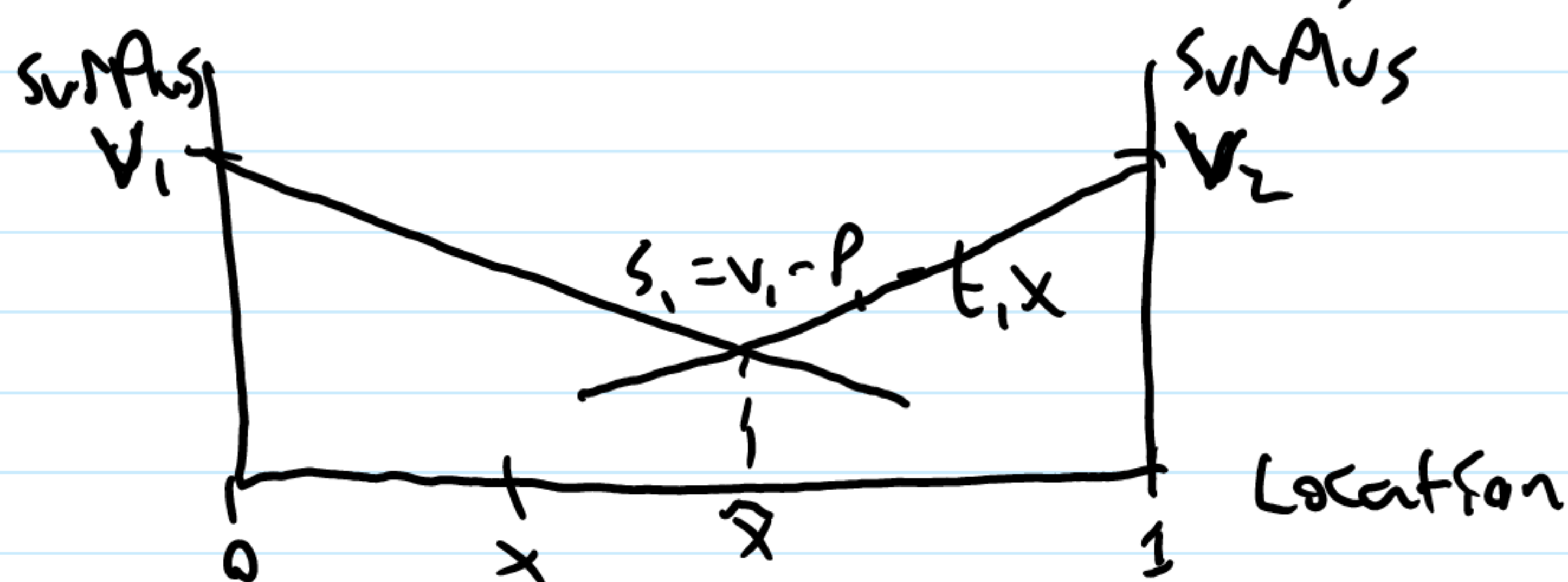


Price Competition (Bertrand)



$$S_1 = V_1 - p - t_1(x)$$

If distribution of customer is uniform F is fraction that buy from 1

$$V_1 - p - t_1 x = V_2 - p - t_2(1-x)$$

$$F = x = \frac{V_1 - V_2}{t_1 + t_2} + \frac{p_2 - p_1}{t_1 + t_2} + \frac{t_2}{t_1 + t_2}$$

$$\pi_1 = n(p_1 - c_1)x - F_1$$

$$\frac{d\pi_1}{dp_1} = (p_1 - c_1) \left(\frac{-1}{t_1 + t_2} \right) + \left[\frac{V_1 - V_2 + p_1 - p_2 + t_2}{t_1 + t_2} \right] = 0$$

$$R_1(p_2) = \frac{1}{2}(V_1 - V_2 + t_2 + c_1) + \frac{1}{2}p_2$$

$$p_1 = (V_1 - V_2 + 2t_2 + t_1 + 2c_1 + c_2) / 4$$

