How to analyze the demand and consumer behavior?

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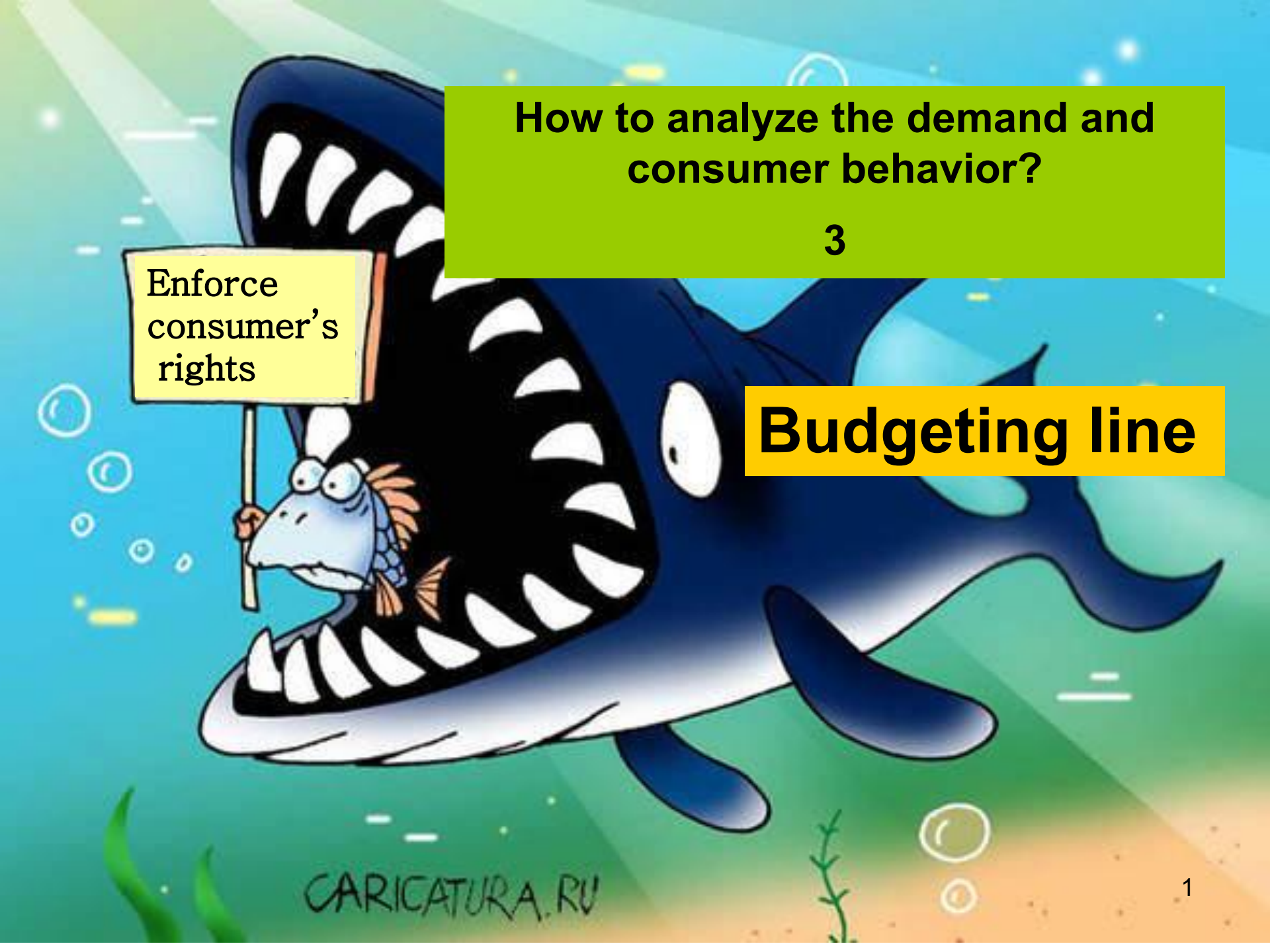


Budgeting line

The ability of consumers to buy products X and Y is determined by budget constraints, which may be expressed graphically by <u>the budgeting line</u>

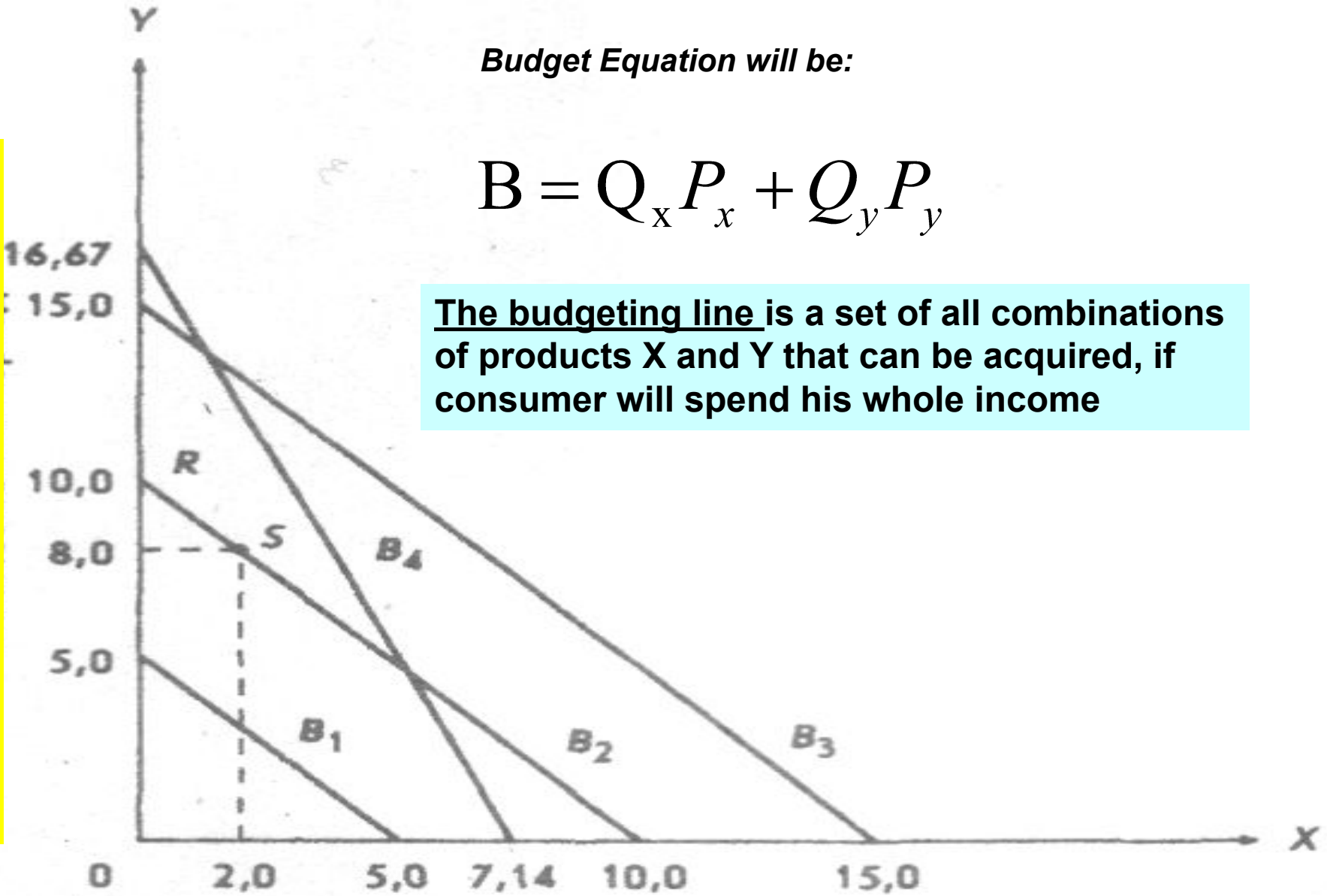
Assume that the consumer has a limited amount of money, which he will spend on the products X and Y

Suppose he'll spend the entire sum

Budget Equation will be:

$$B = Q_x P_x + Q_y P_y$$

The budgeting line is a set of all combinations of products X and Y that can be acquired, if consumer will spend his whole income

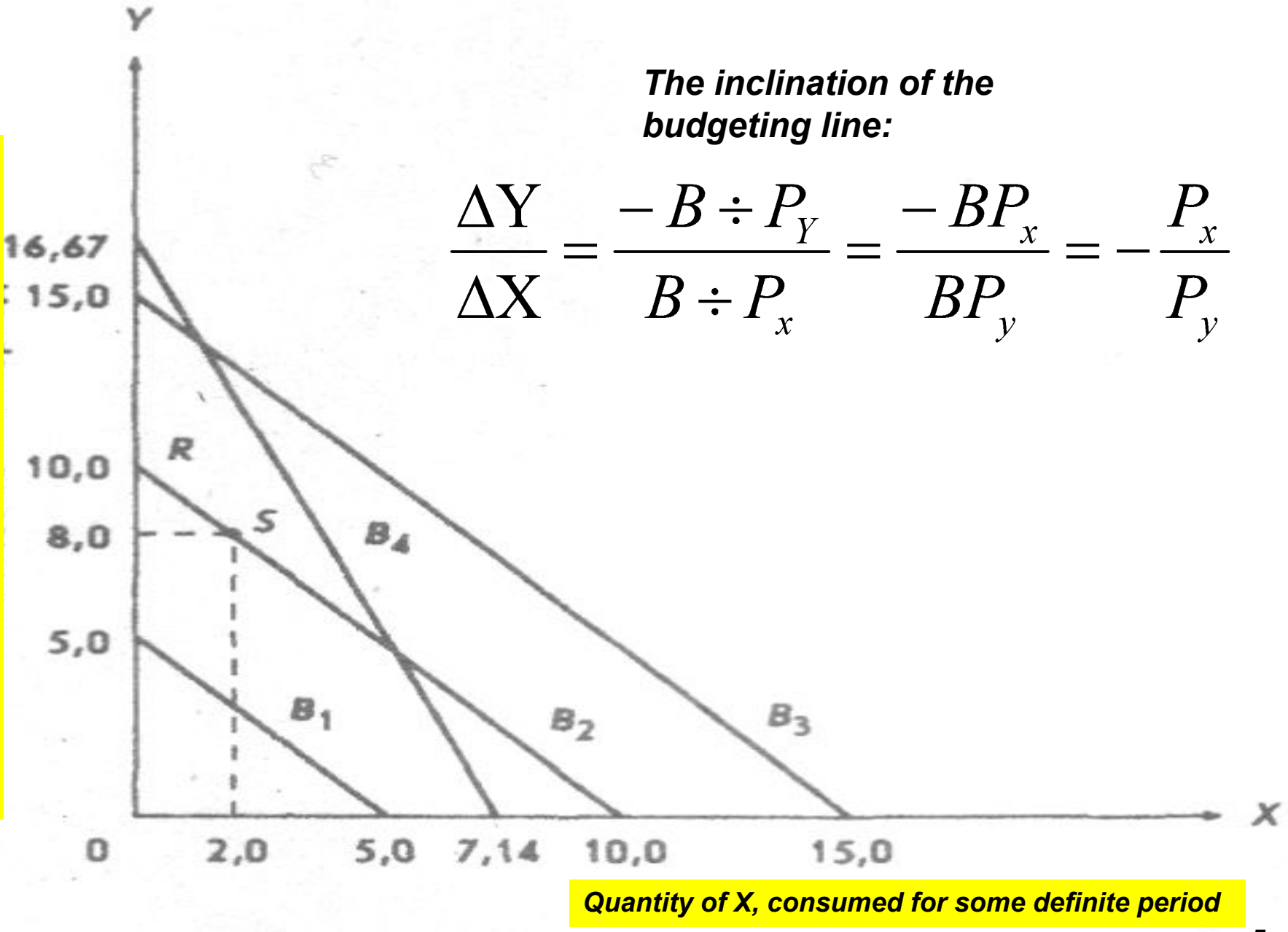


Quantity of Y, consumed for some definite period

Quantity of X, consumed for some definite period

The inclination of the budgeting line:

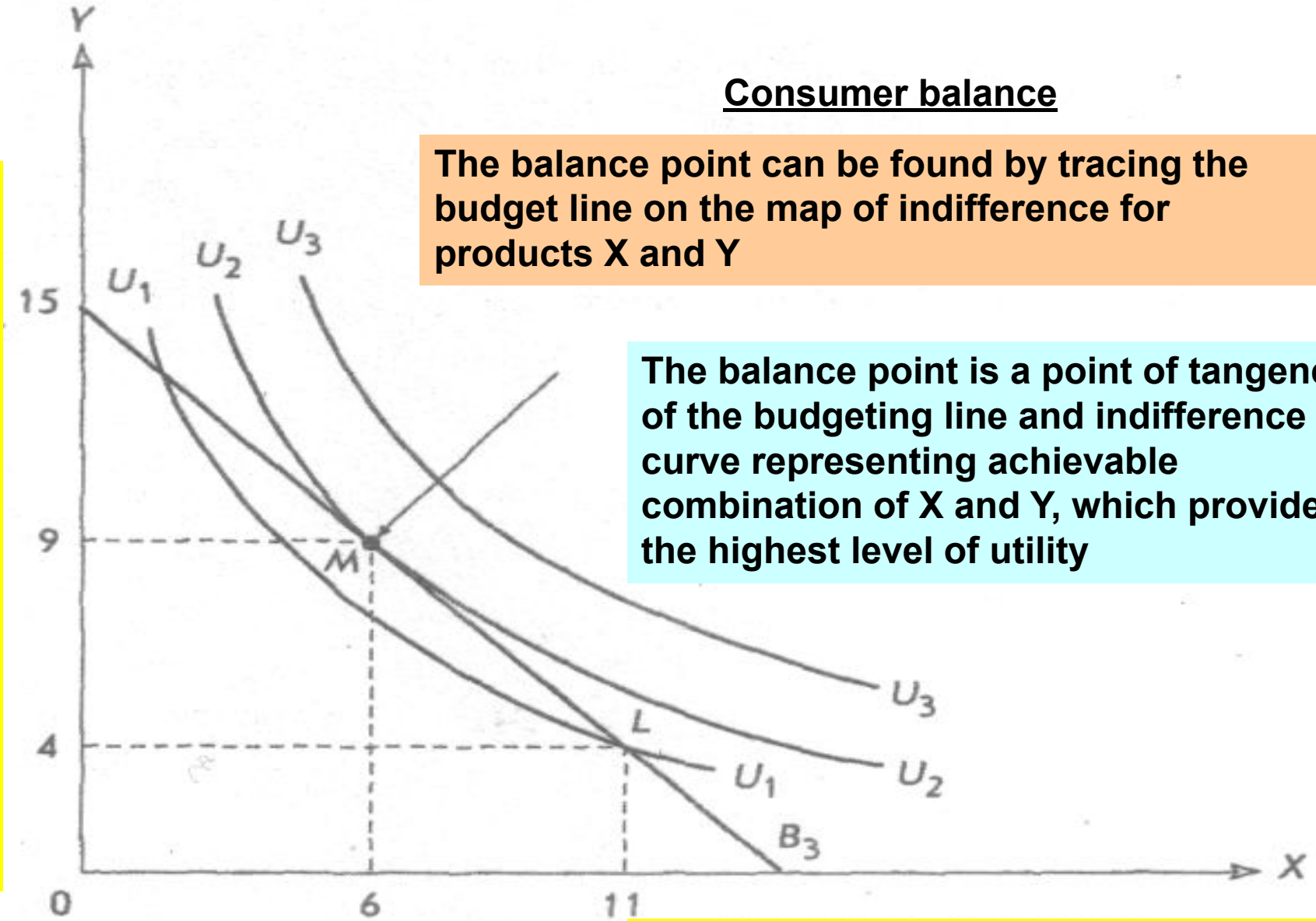
$$\frac{\Delta Y}{\Delta X} = \frac{-B \div P_Y}{B \div P_x} = \frac{-BP_x}{BP_y} = -\frac{P_x}{P_y}$$



Consumer balance

The balance point can be found by tracing the budget line on the map of indifference for products X and Y

The balance point is a point of tangency of the budgeting line and indifference curve representing achievable combination of X and Y, which provides the highest level of utility



Quantity of Y, consumed for some definite period

Quantity of X, consumed for some definite period

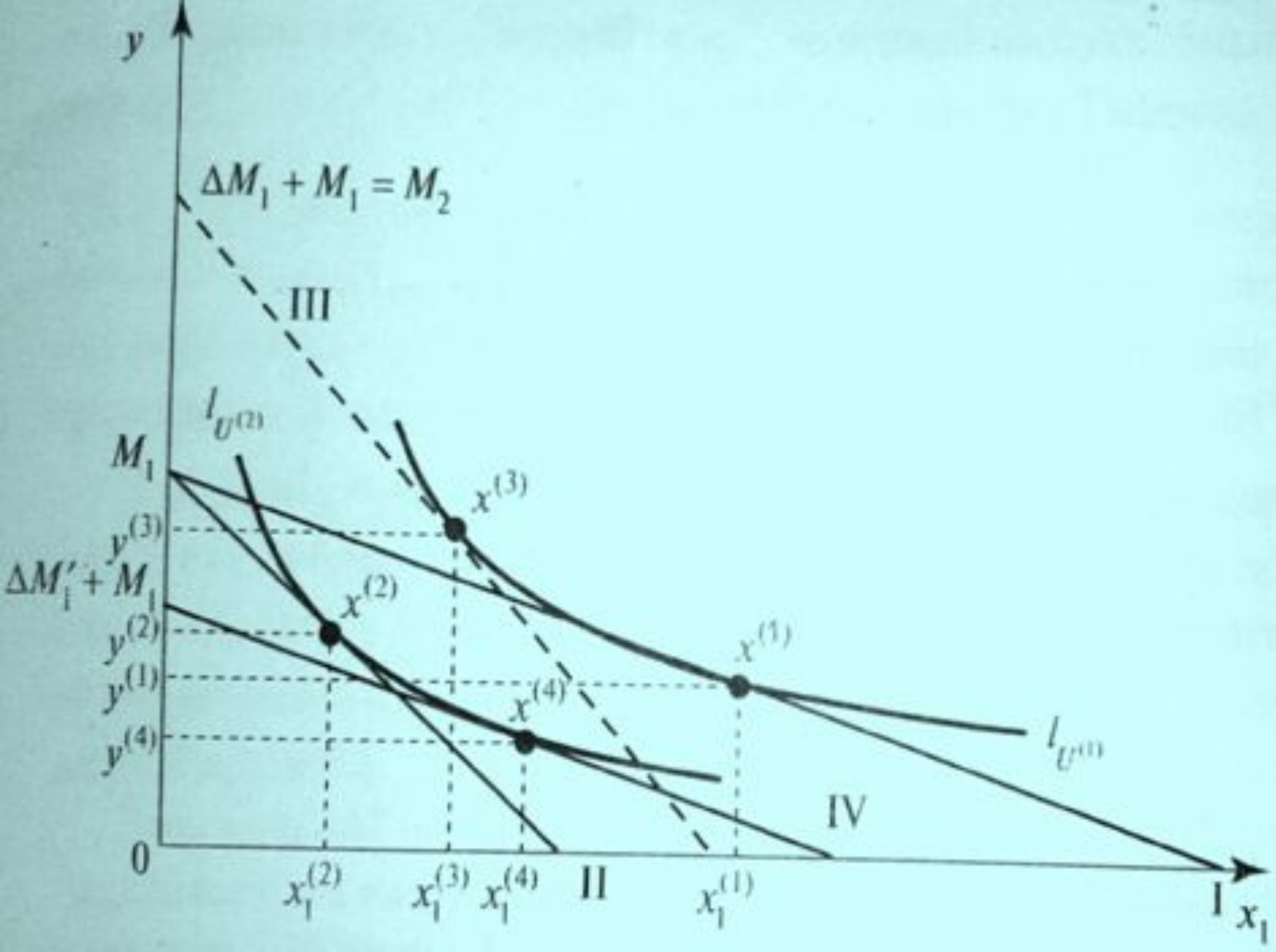
At the tangency point the inclination of the indifference curve is equal to the inclination of the budgeting line:

$$-\frac{\mathrm{MU_x}}{\mathrm{MU_y}} = -\frac{P_x}{P_y}$$

$$\frac{\mathrm{MU_x}}{P_x} = \frac{\mathrm{MU_y}}{P_y}$$

This is the same model, which provides a quantitative approach

The model suggests that the total utility of consumption is maximized if the consumer's income is distributed so that the marginal utility per 1 ruble of expenses for each product is the same


y
$\Delta M_1 + M_1 = M_2$
III
$l_{U^{(2)}}$
M_1
$y^{(3)}$
$\Delta M_1' + M_1$
$y^{(2)}$
$y^{(1)}$
$y^{(4)}$
$x^{(3)}$
$x^{(2)}$
$x^{(1)}$
$x^{(4)}$
$l_{U^{(1)}}$
IV
0
$x_1^{(2)}$
$x_1^{(3)}$
$x_1^{(4)}$
II
$x_1^{(1)}$
I
x_1

$$\mathrm{TU_B} = 400Q_B - 10Q^2{}_B$$

$$\mathrm{TU_C} = 550Q_C - 20Q^2{}_C$$

$$\mathrm{TU_F} = 200Q_F - 5Q^2{}_F$$

P_B = 4$ P_C = 2,50$ P_F = 4$

How to spend 100$ to maximize the total utility?