$AP_L = \frac{Q}{L}$ $MP_L = \frac{\Delta Q}{\Delta L}$

BECON 300
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$AVC = \frac{W}{AP}$ $SMC = \frac{W}{MP}$ Slope of Isoquant $= \frac{\Delta K}{\Delta L}$

Chapter 5: Theory of Consumer Behavior
Quiz

When answering the questions below, please show all details of your calculations.

1. Suppose that the marginal rate of substitution is 4, the price of X is \$6 per unit, and the price of Y is \$2 per unit.

   a. If the consumer obtains 1 more unit of X, how many units of Y must be given up in order to keep utility constant?

   They give up 4 units Y

   0.0

   MRS

   b. If the consumer obtains 1 more unit of Y, how many units of X must be given up in order to keep utility constant?

   1/3 unit of X

   0.5 Yes, given your answer to (a)

   c. What is the rate at which the consumer is *willing* to substitute X for Y? $\frac{MU_X}{MU_Y}$ indiff

   0.5 $\frac{\Delta Y}{\Delta X} = MRS = 4$

   d. What is the rate at which the consumer is *able* to substitute X for Y? market $\frac{P_X}{P_Y}$ of budget

   0.5 $\frac{6}{2}$ 3

   e. If the consumer has standard-shaped indifference curves, which is steeper (in absolute value), the slope of the indifference curve or the slope of the budget constraint (at the current consumption level)? Why?

   0.5

   

   The indifference curve is steeper since they value the goods personally more than what the market rate is actually worth.

   f. Is the consumer making the utility-maximizing choice? Why or why not? If not, what should the consumer do? Explain.

   0.0 No they are not because the marginal rate for each good are not equal, we need to get $\frac{MU_X}{P_X} = \frac{MU_Y}{P_Y}$

   The consumer should get more of Y and less of X till the indiff curve = slope budget would be equal

   2.0 $\frac{4}{6} < \frac{3}{6}$ where $\frac{MU_X}{P_X} = \frac{MU_Y}{P_Y}$ now, slope of MU_X / MU_Y > slope of P_X / P_Y so $\frac{MU_X}{P_X} > \frac{MU_Y}{P_Y}$