



B.E. International Program

Faculty of Economics, Thammasat University

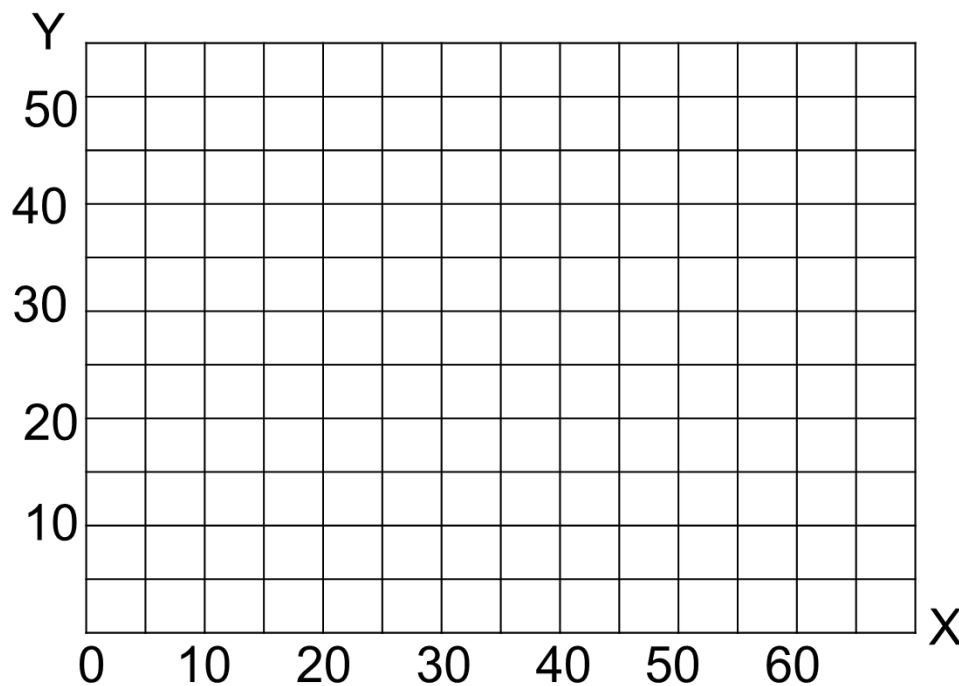


EE 211 Principle of Microeconomics

Exercise 6

(Theory of Consumer Behavior)

1. A consumer has a budget of \$600 to spend on two commodities X (\$20 per unit) and Y (\$12 per unit).
 - a. Draw the budget line for the consumption expenditures of these two commodities in the following figure. Label the budget line BL_A .



- b. Is the combination of 20 units of X and 20 units of Y attainable? Explain.
 - c. Suppose an increase in income allowed a 50 percent increase in the consumption expenditures. Graph the new budget and label it BL_C – assume prices are unchanged.
 - d. Suppose now that the price of X increases to \$30 per unit, *ceteris paribus*. Draw the new budget line and label it BL_D .

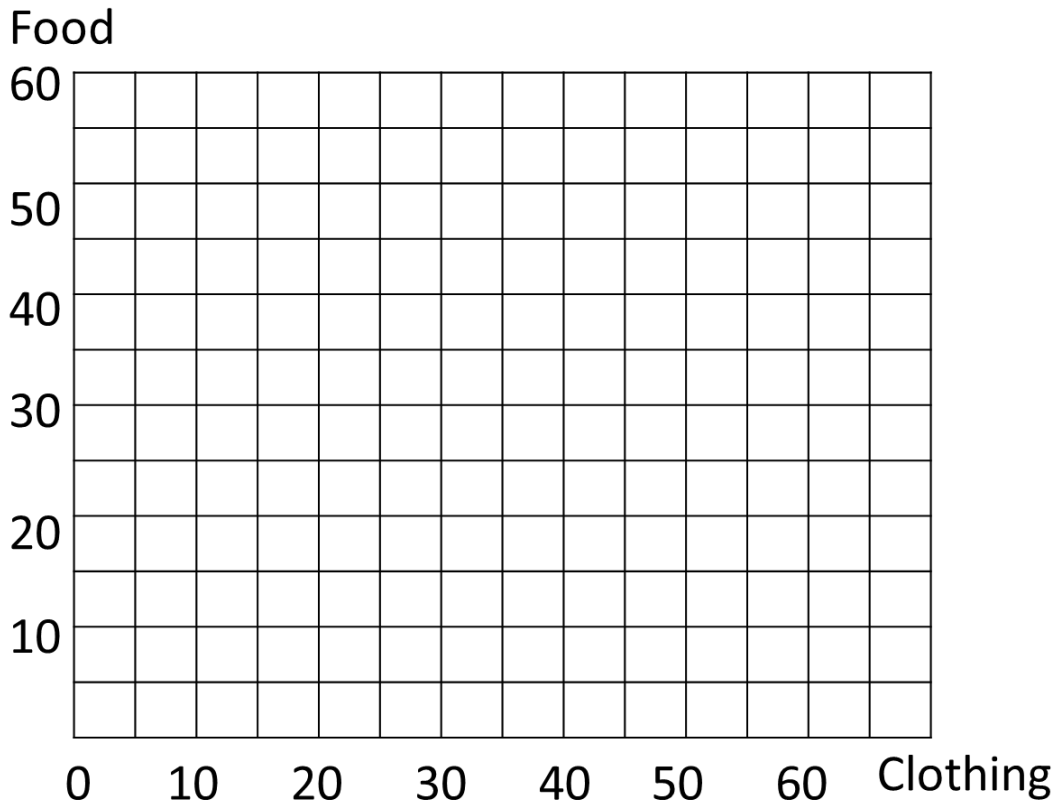
- e. Finally, suppose that the price of **Y** increases to \$18 per unit. Draw the new budget line and label it BL_E . Compare BL_A and BL_E . Explain your findings.

2.

- a. The following table provides information on the quantities of food and clothing that are contained on indifference curves I, II, and III.

Units of food			Units of clothing		
I	II	III	I	II	III
45	50	55	0	10	20
30	35	40	5	15	25
20	25	30	10	20	30
15	20	25	15	25	35
10	15	20	25	35	45

- i. Graph indifference curve I, II, and II on the grid below.



- ii. Draw a budget line on the graph that represents a budget constraint of \$350, and food and clothing prices are \$10 and \$15, respectively.
- iii. Given (i) and (ii), what combination of food and clothing will maximize consumer satisfaction? Explain.

b. Extend the analysis and use the same graph to show the derivation of a demand curve for clothing by proceeding as follows (assume that “food” stands for “everything consumed except clothing”).

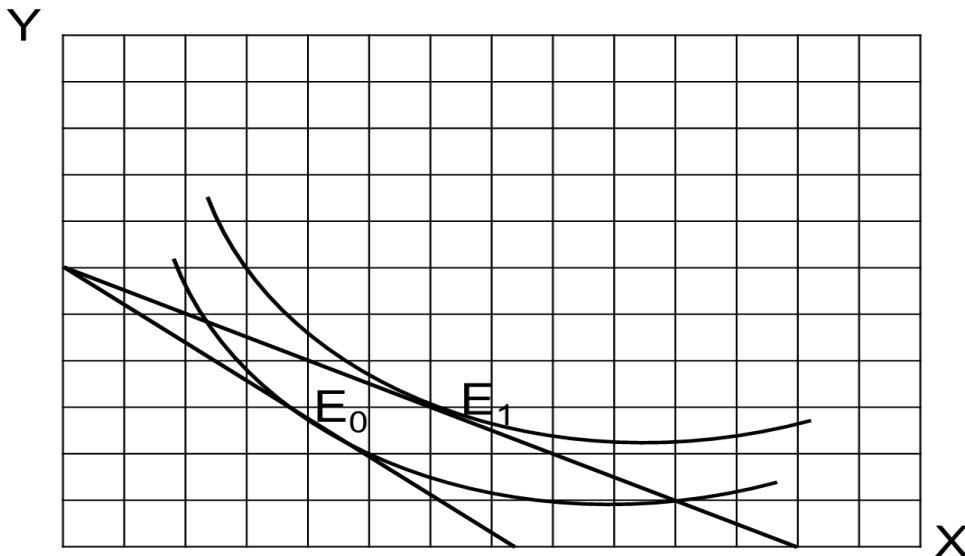
- i. Change the price of clothing so that a budget line with the same food intercept (35) is tangent to each of the indifference curve I, II, and III. Extend the X axis as necessary.

The X –intercept for budget lines tangent to indifference curves I, II, and III are approximately, 23.3, 58, 105, respectively.

The prices of clothing represented by the budget lines are approximately _____, _____, and _____, respectively.

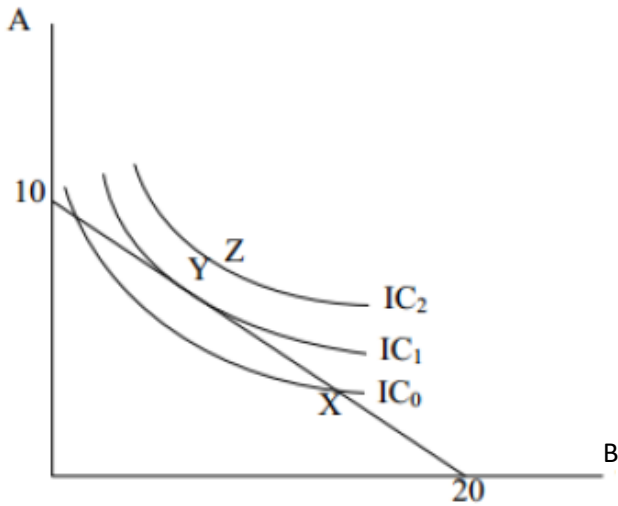
- ii. Draw the price-consumption line on the graph.
- iii. Based on the information on the price-consumption line, derive a demand curve for clothing.

3. In the following figure, a household is shown to move from equilibrium E_0 to a new equilibrium E_1 in response to a decline in the price of commodity X.



- a. Illustrate on the graph the size of the substitution effect.
- b. Illustrate on the graph the size of the income effect.
- c. Is commodity X an inferior good? Explain.

4. Consider the following figure.



- a. If $P_A = 15$ baht, compute the total budget.
 - b. Based on the information in part (a), what is P_B ?
 - c. Calculate the marginal rate of substitution (MRS) at Y. Explain its meaning.
 - d. Explain why the consumer would not choose to consume at point X nor point Z.
 - e. Suppose that P_A reduces by half and P_B increases twice as much, what would happen to MRS at the new equilibrium? Explain the economic meaning of this change.
5. Suppose that a consumer faces a work-leisure trade-off decision. His daily wage rate is 300 baht, and the maximum number of days that he can work is 365 days. If he does not work, he will spend time on leisure.
- a. Draw a budget line on a diagram where the x-axis is the number of days of leisure, and the y-axis is total consumption (derived from his earning).
 - b. Suppose this consumer's optimal choice is to work for 250 days. Calculate his optimal consumption, and the MRS.
 - c. Suppose that his wage increases to 400 baht per day. Would this consumer work more or less? Fully explain the income and substitution effects and correctly label on the diagram.