

Micro Principles

Georgetown University School of Foreign Service in Qatar

Summer 2019

Problem Set 5

Due in class on June 12, 2019.

Write your answers out in full detail, and use graphs wherever possible. Write a concise and precise explanation using appropriate economic vocabulary. Your work must be legible in order to receive credit.

Chapter 8 Problems (page 202): 3, 4, 5, 6, 7, 8.

For questions like #8 on page 202 it may be useful to construct graphs similar to those shown in Figure 8.2 on page 184. Such graphs provide a convenient link between the large discrete changes shown in tables like the ones you produce for #6 and #7 on page 202 and small changes like that described in problem #8.

Chapter 9 Problems (pages 222 & 223): 8, 9, 20, 21.

Special Problems.

1. Haya consumes two beverages: San Pellegrino (i.e. fancy) water, and tap water. She has an income of \$100 to spend on these goods per month. The price of tap water is \$0.30 per glass, and the price of fancy water is \$10 per glass.

Haya tells you that for her, fancy and tap water are neither perfect substitutes nor perfect complements, and that given her budget and these prices, her best affordable consumption bundle is 4 glasses of San Pellegrino and 200 glasses of tap water. (She gets very thirsty.)

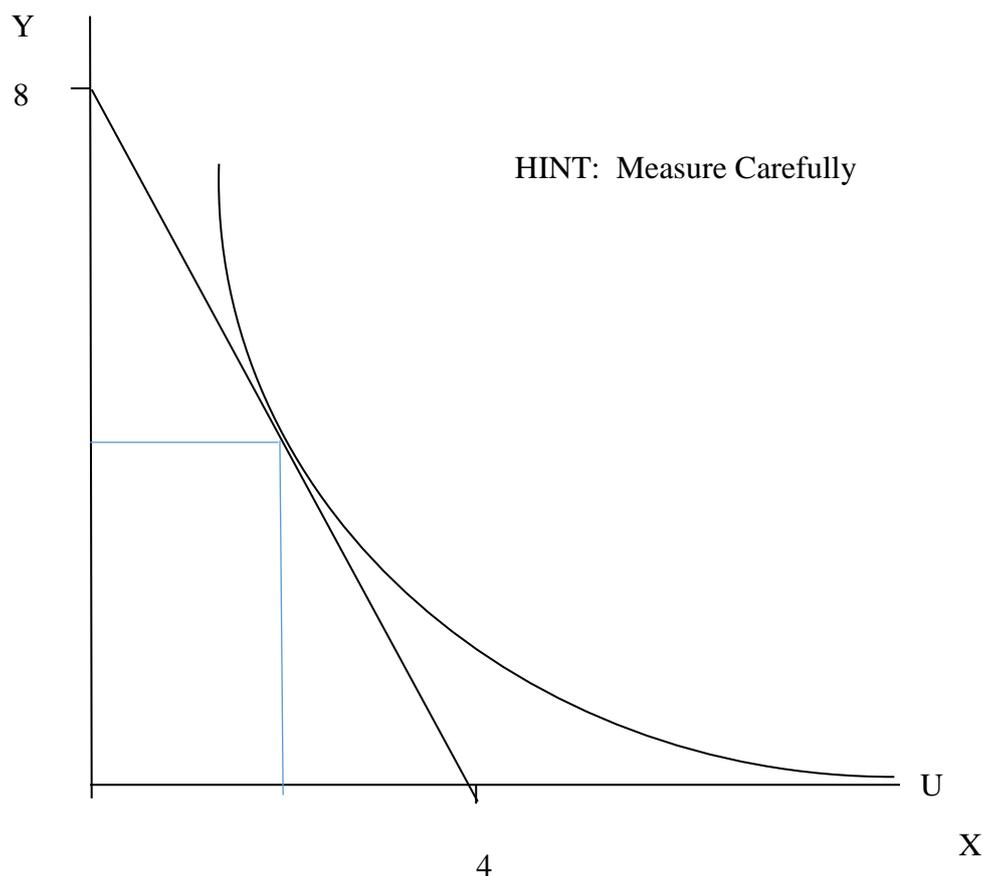
Now suppose the price of fancy water rises to \$20 per glass, and the price of tap water falls to \$0.10 per glass. Is Haya better off, worse off, or indifferent as a result of the price change? Why?

2. Mariam likes hamburgers and pizza. At her current level of consumption, her marginal rate of substitution of hamburgers for slices of pizza is 2. Explain what this means. If she increases her consumption of hamburgers, will her MRS (relinquishing hamburgers for additional pizza) increase or decrease?

3. Imagine that the price of good X is \$6.00 per unit and the price of good Y is \$3.00 per unit and that the consumer has sufficient income to attain the indifference curve shown. Find the

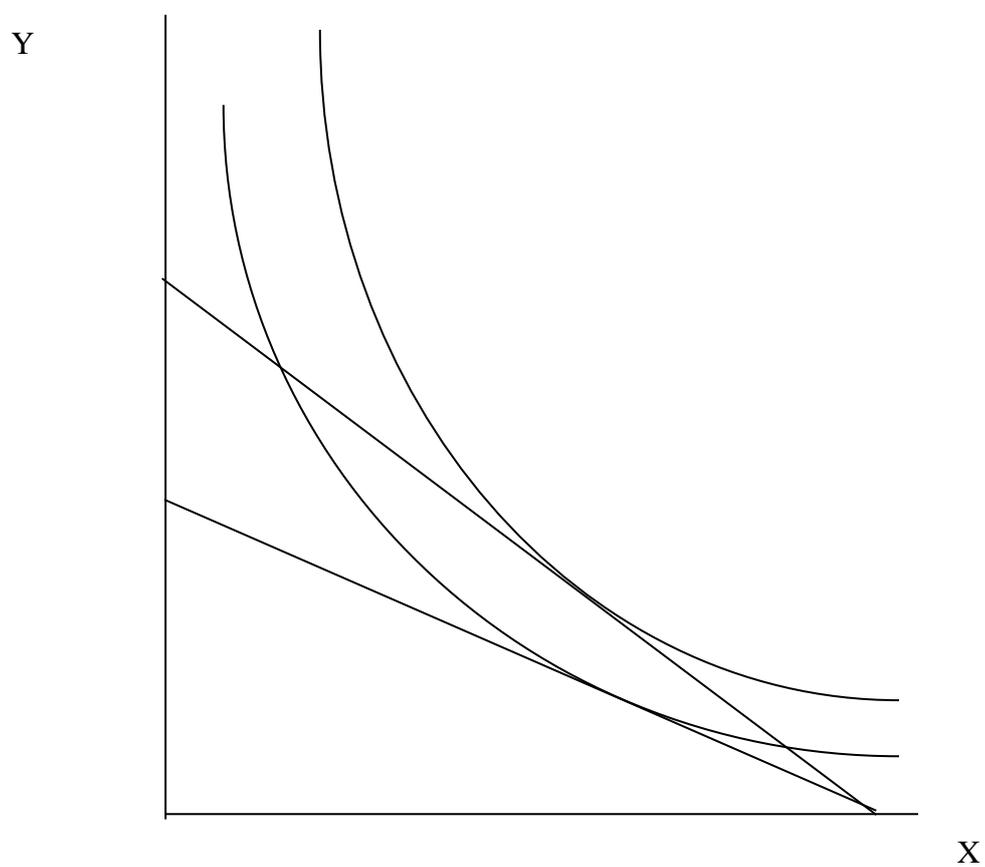
consumer's equilibrium consumption of X and Y and calculate the income necessary to attain this combination. What is the ratio MUX/MUY at this equilibrium? What is the Marginal Rate of Substitution of X for Y at this equilibrium?

Now imagine that the price of good Y increases to \$12.00 per unit. What happens? How much additional income would the consumer need in order to recover her original level of utility? What would be the corresponding equilibrium consumption of X and Y? What is the ratio MUX/MUY at the new equilibrium? What is the MRS?



4. The graph below shows the effect of a decrease in the price of good Y on the consumer's equilibrium. Show the substitution effect and the income effect on the diagram. Does the substitution effect cause an increase or a decrease in the consumption of X? Does it cause an

increase or a decrease in the consumption of Y? Is X a normal good or an inferior good? Is Y a normal good or an inferior good?



5. Use an indifference curve/budget line diagram to illustrate the consumer's equilibrium consumption of food (F) and all other goods (AOG). Use your diagram to derive the consumer's demand curve for food as the price of food increases.

Indifference Curve/Budget Line Diagram

