Last Name (1):\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ First Name (1):\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Last Name (2):\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ First Name (2):\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Last Name (3):\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ First Name (3):\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Last Name (4):\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ First Name (4):\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Microeconomics Homework Part 2 (of 3)

Principles of Economics with Dr. Beck

Module 6

Due Jan 10th at 9:00

This part of the assignment will cover Sessions 3 and 4 and is worth 30 of the 100 points attached to the micro assignment. The point value of each question is marked.

Please write your answers below in **bold** (or incur a 1 point penalty).

Please only submit one copy of the homework (for those of you choosing to work together).

1) At a price of $1 each, a local supermarket sold 50 avocados per week. After a price increase to $1.25, they sold 40 per week. (5 points total)

i) Using the midpoint formula, calculate the elasticity of demand for avocados. (4 points)

ii) Is the demand for avocados elastic, inelastic, or unitary elastic? (1 points)

2) For each of the following pairs of goods, which one would you expect to have a higher elasticity of demand? (1 point each, 5 points total)

i) a required textbook or a mystery novel

ii) 52 inch Samsung HDTV’s or HDTV’s in general

iii) heating oil during the next six months or heating oil during the next five years

iv) lemonade or water

v) electricity or concert tickets

3) The elasticity of demand for entry into your amusement part is -0.7. If your goal is to increase total revenue, should you increase or decrease the price? Why? (2 points) Limit your answer to <50 words.

4) A recent study found that as the price of marijuana increased from $300 per ounce to $400 per ounce in a local area, the amount of alcohol sold in that area increased from 50,000 liters per month to 60,000 liter per month. (6 points total)

i) Calculate the cross price elasticity between marijuana and alcohol. (4 points)

ii) According to your calculation above, are these two goods substitutes or compliments? How did you know? (2 points)

5) Consider the following chart illustrating the connection between hours Claudia spends studying (variable input) and her score on the next exam (total product). (6 points total)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| A | B | C | D | E |
| Number of | Fixed Input | Total Product | Marginal | Avg Prod |
| hours spent | (Book and | (# of test questions | Product of | of study |
| studying | Notes) | answered correctly) | study time | time |
| 0 | 1 | 5 | \*\*\*\*\* | \*\*\*\*\* |
| 1 | 1 | 7 |  |  |
| 2 | 1 | 11 |  |  |
| 3 | 1 | 18 |  |  |
| 4 | 1 | 29 |  |  |
| 5 | 1 | 39 |  |  |
| 6 | 1 | 45 |  |  |
| 7 | 1 | 47 |  |  |
| 8 | 1 | 47 |  |  |

In the above chart fill in the empty boxes for the marginal product and avg product in columns D and E. (4 points)

Does this production process exhibit diminishing marginal returns to studying at any point? If so, at what point? (2 points)

6) Assume the output per day in our factory depends on our level of labor and capital. This relationship can be represented by the production function Q=4K1/2L1/2. Further assume we are operating in the short-run where K is fixed at one unit. (6 points total)

i) Does this production function exhibit diminished marginal product in labor? If so, at what point does marginal product begin to decrease? (2 points)

ii) What is MPL of the 4th worker? Be sure to include the unit of measurement in your answer. (2 points)

iii) We can sell our output for $10 each, and each unit of labor costs $5 per unit. What is the optimal level of labor to hire? (2 points)