Monmouth COLLEGE

- Name: _____
- Date: _____
- Section: _____

# ECON 300: Intermediate Price Theory

# Quiz #4

# Fall 2024

**INSTRUCTIONS:**

- Please read all questions carefully before you begin answering.
- Answer all questions in the spaces provided on the question sheet.
- This quiz consists of 5 pages, including this one. There are a total of 4 problems with a total of 16 subquestions.
- This is a closed-book quiz. Please remove all materials from the top of the desk and take any necessary items from your bags before the exam begins.

**Problem 1. Definitions** **(5 Points Each)**

Select FOUR items on the list of items below, and provide a definition of the items that you chose.

- Substitution Effect
- The Slutsky Equation
- Normal Goods
- The Engel Curve
- Necessary Goods
- Ordinary Goods

1.A. Item #1: _____

1.B. Item #2: _____

1.C. Item #3: _____

1.D. Item #4: _____

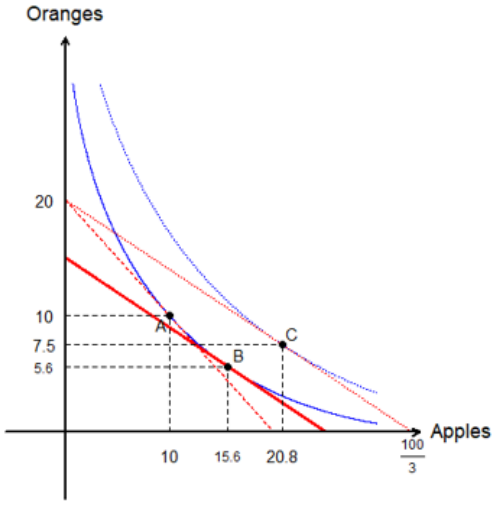
**Problem 2. True / False** **(5 Points Each)**

Determine whether the following statements are either TRUE or FALSE. If you deem that the statement is TRUE, there is no need to justify your answer. If you deem that the statement is FALSE, you MUST justify your verdict by providing an explanation.

2.A. When analyzing a market with two goods, it is not possible for both goods to be inferior goods.

2.B. When the substitution effect is greater in magnitude than the income effect in case the price of a good decreases, the good can be identified as a Giffen good.

2.C. The "movement" from bundle $B$ to bundle $C$ represents the Slutsky substitution effect.




2.D. Suppose that good $x$ and good $y$ are substitutes. If the price of good $y$ increases, in general, the demand for good $x$ will decrease.

**Problem 3. Deriving the Demand Curve** **(7.5 Points Each)**

Suppose that a consumer is participating in a market with two goods: good $x$ and good $y$. The consumer's utility function $u(\cdot)$ is given as follows:

$$u(x, y) = x^2 y$$

The consumer's budget is $M$, and the unit price of good $x$ is $P_x$, and the unit price of good $y$ is $P_y$.

3.A. Find the marginal utility of good $x$ and good $y$, respectively.

- $MU_x =$
- $MU_y =$

3.B. Assuming $MU_x = 2y$ and $MU_y = x$, find the expression for this consumer's marginal rate of substitution between good $x$ and good $y$.

- $MRS_{xy} =$

3.C. Find the formal expression for the consumer's budget constraint.

3.D. Find the optimal ratio of goods $x$ and $y$ necessary for the consumer to maximize utility.

3.E. Find the expression for the consumer's demand function for good $x$.

**Problem 4. Individual to Market Demand** **(7.5 Points Each)**

Suppose we have a market for good $x$ with two consumers. Their individual demand functions are:

$$\text{Consumer 1: } x_1 = 40 - \frac{1}{2}P_x \qquad \text{Consumer 2: } x_2 = 20 - P_x$$

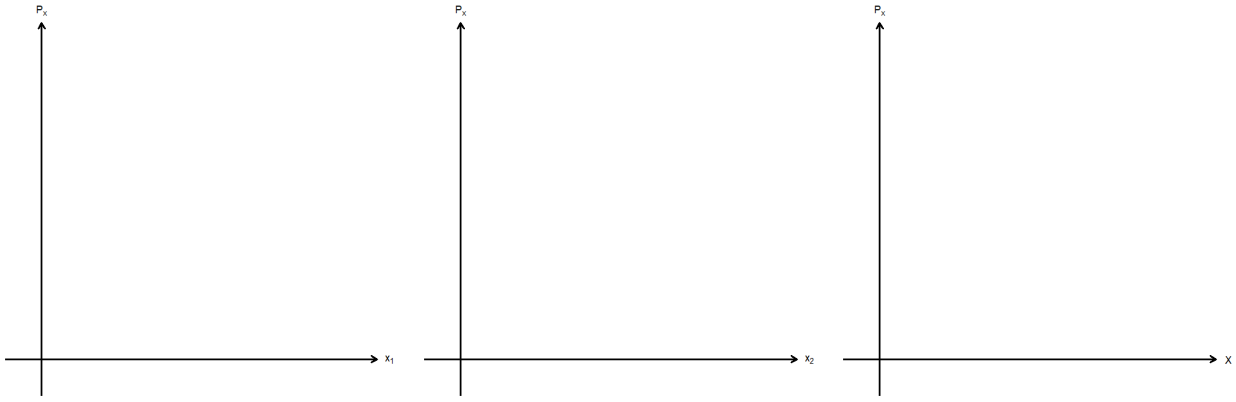
4.A. Find the consumers' inverse demand functions, respectively.

- Consumer 1:
- Consumer 2:

4.B. What is the market demand when...

- $P_x$ is 30?:
- $P_x$ is 10?:

4.C. In the empty charts below, plot (A) consumer 1's demand curve, (B) consumer 2's demand curve, and (C) the market demand curve.

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