Monmouth COLLEGE

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

ECON 300: Intermediate Price Theory

Practice Final Exam

NOTE:

- This practice final will consist of relatively simple tasks compared to the actual final exam.
- The final exam will also be longer than this practice final exam, since the final exam will be drafted for a 90 minute exam period.
- You should use this practice final exam as a preview of the *style* and *format* of the final exam.

INSTRUCTIONS:

- Please read all questions carefully before you begin answering.
- Answer all questions in the spaces provided on the question sheet.
- Circle the correct answer for the multiple-choice questions.
- If you mark a T/F question as False, you must provide an explanation, and a False conclusion without any justification will not result in points.
- This practice final exam is not a graded item.

Problem 1. Definitions

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

- Technical Progress
- Marginal Revenue
- Duopoly
- Transitive Preferences
- Own Price Elasticity of Demand
- Consumer Surplus

1.A. Item #1: _____

1.B. Item #2: _____

1.C. Item #3: _____

Problem 2. True / False

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. The long run supply curve is "steeper" compared to the short run supply curve.

2.B. When two goods x and y are perfect substitutes, the consumer's preferences will be represented by a linear utility function.

2.C. When the consumers' demand is more elastic compared to the producers' supply, if the government levies a tax, the consumer will bear a larger burden.

2.D. The marginal rate of substitution measures "how many units of good y the consumer is willing to give up for one unit of good x."

Problem 3. Multiple Choice

3.A. Which of the following statements is true?

a. Any bundle of goods that is "above" the budget line is affordable for the consumer.
b. Any bundle of goods that is "below" an indifference curve is more preferred to any bundle on the indifference curve.
c. All preferences can be represented by utility functions.
d. The marginal rate of substitution is the slope of the indifference curve.

3.B. Select ALL properties that are required for a preference relation to be *rational*.

a. Completeness
b. Convexity
c. Transitivity
d. Continuity

3.C. Which of the following statements is true?

a. The short run cost of producing Q units will be lower than the long run cost of producing Q units.
b. If the output is doubled when the inputs of production are tripled, we can conclude that the production technology exhibits increasing returns to scale.
c. Individual firms in a perfectly competitive output market will encounter a horizontal demand curve.
d. The short run is a timeframe where individual firms' input of capital is fixed.

3.D. Which of the following statements is NOT true?

a. When games are played indefinitely, players will always cooperate.
b. "Complete information" in games imply that all players know each other's payoff structures.
c. Dynamic games can be represented in the normal form.
d. Some static games can be represented in its normal form.

Problem 4. Consumer Theory

Suppose that a consumer is participating in a market where goods x and y are traded. This consumer's utility function is given as:

$$u(x, y) = 2x^3y$$

The price of good x is 6, the price of good y is 4, and the consumer's income is 160. Based on this information, solve the following questions.

4.A. Find the consumer's marginal utility of good x and y.

- $MU_x =$

- $MU_y =$

4.B. Assuming $MU_x = 3y$ and $MU_y = x$, what is the consumer's marginal rate of substitution?

- $MRS_{xy} =$

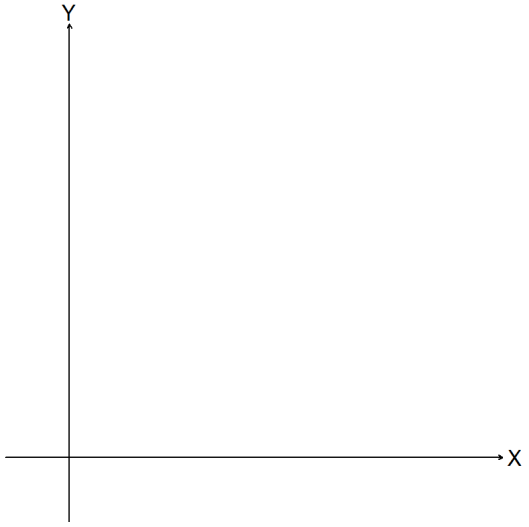
4.C. Find the optimal ratio of good x and good y for this consumer.

4.D. Find the optimal units of goods x and good y for this consumer.

- $x^* =$

- $y^* =$

4.E. Complete a diagram illustrating the consumer's utility maximization problem in the empty chart below. You must plot and label all elements listed below:



- The budget line.
- The utility maximizing indifference curve.
- The optimal bundle (x^*, y^*)
- The x intercept value.
- The y intercept value.

4.F. What is the optimal units of good x for the consumer when the price of good x increases to 12?

4.G. Based on your answer on 4.F, is this good an ordinary good or a Giffen good? Why?

Problem 5. Game Theory

Suppose two players are playing a static game of complete information. The parameters of the game is as described below:

- Players: "Player 1" and "Player 2."
- Actions: Heads (H) and tails (T) for both players.
- Payoffs:
  - Read the outcome as (Player 1's action, Player 2's action).
  - When the outcome is (H, H), player 1 receives 10 and player 2 receives 8.
  - When the outcome is (H, T), player 1 receives 3 and player 2 receives 2.
  - When the outcome is (T, H), player 1 receives 6 and player 2 receives 6.
  - When the outcome is (T, T), player 1 receives 7 and player 2 receives 15.

5.A. Represent this game in its normal form, and find all Nash equilibria.