

# Midterm Examination Fall 2015: Microeconomic Theory Econ 230

October 19, 2015

## VERSION 1

There are two sections to this exam. First there are 12 multiple choice questions and then there are 4 non-multiple choice questions.

Please enter your Name and Student ID here:

Name:

Student ID:

Please also enter your Name and Student ID in the left top corner of each subsequent page.

# Multiple Choice Questions (3 Questions, 5 points each)

Please circle all correct answers. More than one answer might be correct. Points are only given if you circle all correct answers and non that are false.

1. What is the Marginal Rate of Substitution of x for y?
  - (a) The rate at which a consumer is willing to trade-off x for y.
  - (b) The willingness-to-accept.
  - (c) The price ratio  $\frac{p_y}{p_x}$
  - (d)  $\frac{\frac{\partial U(x,y)}{\partial y}}{\frac{\partial U(x,y)}{\partial x}}$
  - (e) The slope of the indifference curve.
  
2. The long run price elasticity of demand for gasoline has been estimated as -1.5. If an extended war in the Middle-East causes the price of oil (from which gasoline is made) to permanently increase, how would that affect total expenditures on gasoline in the long run, all other things unchanged?
  - (a) Total expenditures would rise.
  - (b) Total expenditures would fall.
  - (c) Total expenditures would remain unchanged.
  - (d) Not enough information is given to answer the question.

3. Circle all correct statements:

- (e) If Demand is less elastic than Supply, then consumers will bear a higher share of the tax incidence.
- (f) If Demand is perfectly inelastic, then the Dead Weight Loss from imposing a price ceiling is 0.
- (g) If Supply is perfectly inelastic, then the Dead Weight Loss from imposing a price ceiling is 0.
- (h) None of these statements are correct.

## Short Questions (5 points each)

Please use only the provided space for your answers. Please perform all auxiliary calculations on the scrap paper provided by us.

SQ 1. Assume that Bob spends  $\frac{1}{3}$  of his income on beer and  $\frac{2}{3}$  on pizza. Assume furthermore that the income elasticity of beer is 3. What is the income elasticity of pizza?

Answer: \_\_\_\_\_

SQ 2 Provide a normative statement related to income taxation (20 words or less):

Answer:

SQ 3 (5 points) Provide a positive statement related to income taxation (20 words or less):

Answer:

# Long Questions

## NM- Question 1 Solving for Demand (10 points)

Assume that Sarah's preferences can be represented by the following utility function:  $U(x, y) = x\sqrt{y}$  and that her budget is given by  $p_x x + p_y y = 1$ . What is the Marginal Rate of Substitution of x for y? Provide the Demand Function for x and the Demand function for y.

**NM- Question 2 (10 points)**

Assume that the Inverse Demand Function for Good X is given by  $P(X) = X^{-2}$ . Assume that the supply of the good shifts inwards so that the price of the good increases by 2% - what happens to the Quantity demanded?

**NM- Question 3 (10 points)**

True, False, or Uncertain? Justify your answer in less than 200 words using 2 graphs or less. No points are awarded without a justification.

Assume that the government decides to finance additional expenditures by raising taxes on food consumption in restaurants by \$1 billion. The economic costs imposed on the restaurants and its clients exceeds the revenue the government raises.

**NM-Question 4 (10 points)** Explain the relation between preference rankings, rational preference rankings, and Utility functions (200 words or less).