

Write your name on the cover of the test booklet and nowhere else. Enclose this sheet with the booklet. Failure to follow these directions will cost you 1 point. The test has 100 points (to be scaled up to 170 points) and is scheduled to take 50 minutes. Therefore, expect to spend 1 minute for every 2 points. For example, a 12-point question should take 6 minutes. I cannot give extra time because some students have a class after your class.

1) (12 points) Answer EITHER Part A OR Part B.

A) What is meant by *revealed preference*? Explain how it can be used by economists.

B) State the *equi-marginal principle*. Explain why it makes sense.

2) (14 points) Answer EITHER Part A OR Part B OR Part C.

A) Draw a normal demand curve. Draw on the same diagram what would happen to that demand curve if the bandwagon effect suddenly started acting upon this demand curve. Explain why it changed as drawn.

B) Use a diagram to illustrate the *identification problem*. Explain how your graph illustrates that problem.

C) Draw two demand curves which represent two individuals. Use them to derive the market demand. Explain how you found the market demand.

3) (14 points) Answer EITHER Part A OR Part B.

A) Suppose you rolled one die. You earned \$30 for a five or a six, but you got nothing if you roll a one, two, three, or four. What is the expected payoff and standard deviation? Show all work.

B) Use the equation $MR = P[1+(1/E_p)]$ to prove that a firm will not want to produce in the inelastic section of the demand curve.

4) (30 points) Answer EITHER Part A OR Part B.

A) Draw the indifference curve/budget constraint diagram of milk and cookies. Draw an increase in the price of cookies. Use your graph to find two points on the price-consumption path and two points on the demand curve for cookies. Explain how you found the two points on each graph. It will be helpful if you give the coordinates of the consumption points on the first graph.

B) Draw the indifference curve/budget constraint diagram of hats and coats. Draw an increase in your income. Use your graph to find two points on the income-consumption path and two points on the Engel Curve. Explain how you found the two points on each graph. It will be helpful if you give the coordinates of the consumption points on the first graph.

5) (30 points) Answer EITHER Part A OR Part B.

A) Draw a budget constraint/indifference curve diagram for lettuce and tomatoes assuming that they are **complements** in salads. For your first budget constraint, have an income of \$12. Lettuce costs \$2/head and tomatoes cost \$4/lb. Illustrate what happens when the price of tomatoes goes down to \$2/lb. Draw a third budget constraint so that you can find the income and substitution effects. BRIEFLY Explain how you found the three budget constraints. How do you see the income and substitution effects? How can you tell? How can you tell on your graph that lettuce and tomatoes are complements?

B) Draw a budget constraint/indifference curve diagram for cereal and eggs assuming that they are **substitutes** for breakfast. For your first budget constraint, have an income of \$18. Eggs cost \$6/dozen and cereal costs \$3/box. Illustrate what happens when the price of eggs goes down to \$3/dozen. Draw a third budget constraint so that you can find the income and substitution effects. BRIEFLY Explain how you found the three budget constraints. How do you see the income and substitution effects? How can you tell? How can you tell on your graph that eggs and cereal are substitutes?