Eric Doviak
Principles of Microeconomics

Review for the Mid-term Exam

The first exam will cover Lectures 1, 2, 3 and 4. The exam will require you to define some of the terms listed below and require you to solve some problems. The problems given below were taken from exams that I have given in the past. They are a supplement to the homeworks. They are NOT a substitute for the homeworks.

Terms to know

- independent variable
- dependent variable
- ceteris paribus
- absolute advantage
- comparative advantage
- opportunity cost
- relative price
- gains from trade
- production possibilities frontier
- increasing opportunity cost
- price
- individual demand curve
- market demand curve
- quantity demanded
- individual supply curve
- market supply curve
- quantity supplied
- income
- substitutes
- complements
- total cost
- average cost
- marginal cost
- excess demand
- excess supply
- equilibrium
- price elasticity of demand
- elastic region of demand curve
- inelastic region of demand curve

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Short Answer One

Dina and Jordan work for a state senator. Their responsibilities include clipping newspaper articles and writing happy letters. Dina can clip 10 articles per day and write 15 happy letters per day. Jordan can clip 4 articles per day and write 3 happy letters per day.

Who has a comparative advantage in clipping articles? Who has a comparative advantage in writing happy letters?

The senator is a very strange man. All of his happiness depends on the number of clipped articles and happy letters that Dina and Jordan produce.

The senator's mood varies from day to day.
- When he's in a good mood, he values clipped articles twice as much as he values happy letters.
- When he's in a bad mood, he values happy letters twice as much as he values clipped articles.
- When he's in a neutral mood, he values happy letters and clipped articles equally.

Suppose the senator is in a neutral mood. How can Dina and Jordan make the senator the happiest? In other words, who will clip articles and who will write happy letters? Or will Dina and Jordan both specialize in clipping articles or will they both specialize in writing happy letters? In your answer, be sure to explain **why.**

How can Dina and Jordan make the senator the happiest when he is in a good mood? How can Dina and Jordan make the senator the happiest when he is in a bad mood? In your answer, be sure to explain **why.**

Short Answer Two

If a business faces a production possibilities frontier (PPF) that exhibits increasing opportunity cost, why would the business want to produce at the point along the PPF where its opportunity cost equals the relative price?

Short Answer Three

Define "traffic jams" as the slow movement of vehicles on a road, causing long waiting times. Use that definition to answer the following questions (which I thought of while staring at the long line of cars ahead of me on the Long Island Expressway).

1. Using supply and demand curves for roadway capacity:
    a. Explain why traffic jams occur.
    b. What non-price rationing mechanism equates the quantity of roadway capacity supplied with the quantity of roadway capacity demanded?
2. Describe three policies that the government could use to reduce traffic jams.
    a. Illustrate each policy with supply and demand curves.
    b. If the demand curve were linear, how would each policy affect the elasticity of demand for roadway capacity?

Short Answer Four

Last year, Pres. George W. Bush and the Republicans in Congress added a prescription drug benefit to Medicare. While the senior citizens and the disabled will clearly pay less for prescription drugs after the reform is fully implemented, non-seniors and non-disabled will continue to pay the market price.

This problem requires you to use a highly simplified model to analyze the effect that the drug bill will have on the market price of prescription drugs.

Assume that there are only two groups of people – the young and the old and that before the Medicare was passed both the young and the old always paid the market equilibrium price for prescription drugs.

- The young's demand for prescription drugs is given by: $Q_{DY} = 400 - 15p$
- The old's demand for prescription drugs is given by: $Q_{DO} = 600 - 5p$
- The market supply of prescription drugs is given by: $Q_{SM} = 200 + 20p$

What is the market demand for prescription drugs? (Hint: market demand is the sum of all the individual demand curves. That is, market demand is the sum of the individual quantities demanded at each price).

Find the initial market equilibrium price and quantity. How many prescription drugs will the young buy? How many will the old buy?

For simplicity, assume that once the Medicare reform is fully implemented, the old will only pay a "co-payment" (a fixed price) which will not change due to shifts of market supply and demand. Medicare will pay the difference between the market price and the co-payment directly to the drug companies, so that the drug companies always receive the market price for each prescription drug that they sell.

If the government sets the co-payment at $6, then how many prescription drugs will the old buy?

What will the new market demand for prescription drugs be? What will the new market equilibrium price and quantity be? How many prescription drugs will the young buy? How many will the old buy?

How will the new Medicare prescription drug benefit affect the market demand for prescription drugs? How will the drug benefit affect the prices that **non**-seniors and the **non**-disabled pay for prescription drugs? Will they be helped or hurt by the new program? In your answer, be sure to explain **why.**

Short Answer Five

You are George Costanza. You work for the New York Yankees. George Steinbrenner wanted to make championship series tickets available to the public at a reasonable price, so he sold field box seat for tonight's ALCS game against the Boston Red Sox for $225 at the box office.

Your telephone rings. You pick up the phone. It's Mr. Steinbrenner and he is mad! He orders you to come into his office immediately. He just visited StubHub.com and saw that field box seats for tonight's game are being resold for $2225.

Mr. Steinbrenner wants to know why people who slept on the street in front of Yankee Stadium to buy those tickets are now reselling them. Explain to Mr. Steinbrenner why they slept out for tickets, then explain to him why the tickets are being resold at a much higher price.

If Mr. Steinbrenner wants to maximize his profits, should he have sold field box seats for $2225? If there are 1000 field box seats at Yankee Stadium, how much higher would his profits have been?

Short Answer Six

You are the chief economic advisor to the president of Nacirema, a large country threatened by global terrorism. The terrorists seek to gain control of Iduas Aibara, the primary exporter of oil to Nacirema. The terrorists abhor Nacirema's close relationship with Iduas Aibara and have publicly stated that if they gain control of Iduas Aibara's oil, they will take revenge on Nacirema by cutting off its supply of oil.

Because Nacirema has very few supplies of domestic oil, Nacirema must prepare to deal with shocks to its oil supply. The president of Nacirema is particularly interested in a comparing his country's dependence on foreign oil to Ecnarf's.

Using the data available to you, you have estimated the demand curve in each country.

- The demand for oil in Nacirema is: $D_N = 1000 – 10\ P$
- The demand for oil in Ecnarf is: $D_E = 2000 – 60\ P$

If the world market price per barrel of oil is $15:

- How many barrels will Nacirema demand? What is Nacirema's price elasticity of demand?
- How many barrels will Ecnarf demand? What is Ecnarf's price elasticity of demand?

Answer those same questions for a price of $20 per barrel and for a price of $25 per barrel.

At what price levels is Nacirema's demand elastic? At what price levels is Nacirema's demand inelastic? At what price levels is Ecnarf's demand elastic? At what price levels is Ecnarf's demand inelastic?

Which country is more dependent on foreign oil? Which country is less dependent on foreign oil? Why? Does the price elasticity of demand in each country explain each country's dependence? Why or why not?

Provide a few reasons why one country might be more dependent on foreign oil than the other.

Quick answers

	$15	$20	$25
barrels demanded by Nacirema	850	800	750
price elasticity in Nacirema	$3/17$	$1/4$	$1/3$
barrels demanded by Ecnarf	1100	800	500
price elasticity in Ecnarf	$9/11$	$3/2$	3

point of unitary elasticity in Nacirema	$50
point of unitary elasticity in Ecnarf	$16 $2/3$