

Econ 211 > Problem Set 2

1. Distinguish between a change in demand and a movement along a given demand curve. Explain the chief causes of each. Now distinguish between a change in supply and a movement along a given supply curve. Explain the chief causes of each.
2. Which of the following statements uses incorrect terminology? Explain.
 - a) "The recent fare war among the major airlines has increased the demand for air travel."
 - b) "The terrorist attack on America has caused the demand for air travel to fall."
3. What is the effect of each of the following events on the equilibrium price and quantity of computers in the US market?
 - a) The price of plastic increases.
 - b) The price of printers (a complement in consumption) decreases.
 - c) The government expands the entry of foreign-made computers into the U.S.
 - d) The government increases the income tax rate on all consumers.
 - e) The price of silicon chips decreases and internet service providers lower their prices.
 - f) Consumers expect that the price of computers will decrease in the future and the government imposes a tax on all computer manufacturers.
4. Consider the market for hamburger in the US. Determine what happens to the equilibrium price and quantity of hamburger under each of the following situations:
 - a) the price of hot dogs rises.
 - b) the price of hamburger buns increases.
 - c) the cost of cow feed increases.
 - d) several thousand cattle ranchers exit the industry.
 - e) consumer income rises due to an economy-wide expansion and cattle ranches are infested with a herd-killing disease.
 - f) environmentalists successfully put pressure on cattle ranchers to adopt costly "green" ranching methods and consumers learn that hamburger contains a nutrient that causes sterility in males.
5. Consider the market for automobiles in the US. Determine what happens to the equilibrium price and quantity of automobiles under each of the following situations:
 - a) the price of fiber glass decreases.
 - b) the price of gasoline increases.
 - c) the United Automobile Workers of America successfully strike for higher wages.
 - d) the government announces a large income tax cut for all Americans.
 - e) several automobile manufacturers exit the industry due to negative profits and news reports indicate that Americans are moving to live within walking distance of their work.
 - f) automobile manufacturers implement a more efficient production method and manufacturers add new internet based applications to the typical automobile.
6. The number of compact discs sold in markets has more than quadrupled over the past three years. The average price of a compact disc, however, has fallen. Use supply and demand analysis to explain this phenomenon.
7. The number of doctors employed in the US has decreased over the last decade. The wage rate of doctors has increased over the same time period. Use supply and demand analysis to explain this phenomenon.
8. Suppose that the market price for personal computers has fallen over the course of a year from \$1500 to \$1300. At the same time, the number of computers bought has risen from 5 million to 6.5 million. Suggest an explanation for this data using supply and demand.

9. Here are some more S&D questions. It would be a good idea to take a piece of paper and sketch the demand or supply curves described or inferred in each case below.
- If a huge increase in demand for soybeans results in almost no increase in the price of soybeans, what can you conclude about the supply of soybeans?
 - If a large fall in the cost of growing corn results in almost no decrease in the price of corn, what can you conclude about the demand for corn?
 - What effect would you predict on the price of rental housing in an area where several major employers have recently closed down or moved away?
 - What effect do you think the development of synthetic fabrics had on the price of cotton?
10. "If the DEA intercepts 100 tons of cocaine, the supply of cocaine will fall. This will cause the price to rise, which will increase the supply back to its original position." True, false, or uncertain? Explain.
11. The data in the table below refers to the compact disc market.

Agent Type	Buyer Values	Number in the Market
Type A Buyers	\$60	4
Type B Buyers	\$45	4
Type C Buyers	\$20	6

Agent Type	Seller Costs	Number in the Market
Type D Sellers	\$5	5
Type E Sellers	\$20	4
Type F Sellers	\$35	6

- Plot the supply and demand curves based on this data. [Remember, these are going to be step functions.]
 - What is the competitive equilibrium price and quantity?
 - Calculate the value of each of the following at the competitive equilibrium: Consumer surplus, Producer surplus, and Social welfare
 - Suppose the government imposed a price ceiling at \$15. What quantity would buyers demand? What quantity would sellers supply? Is there a shortage or surplus? How big is it? What happens to CS, PS, and Social Welfare?
 - Suppose the government imposed a price floor at \$50. What quantity would buyers demand? What quantity would sellers supply? Is there a shortage or surplus? How big is it? What happens to CS, PS, and Social Welfare?
12. When the price of water in southern California rose, some analysts attributed the change to the drought, others attributed it to more people living in southern California, and those people who live there buying bigger swimming pools. Since both the drought and the influx of people who are getting richer occurred simultaneously, how would you determine which set of analysts had described the dominant cause of the price increase?
13. Assume that the demand for heroin is inelastic, and assume further that users get the funds to pay for heroin by stealing. Suppose the government increases penalties on heroin suppliers and thereby reduces supply. What will happen to the price of heroin? What will happen to the amount of crime committed by heroin users?
14. What three factors determine the size of the elasticity of demand for a particular commodity?

15. Consider the hypothetical data below about the film market. The data in the bottom two rows of the table reflect events affecting the film market equilibrium data in the top two rows of the table. Depict the sequence of events in a single supply and demand diagram for the film market, and carefully explain any shifts you show for your supply and demand curves.

	July	August	September
Equilibrium price of film	\$2	\$3	\$4
Equilibrium quantity of film	100	150	75
Price of photo developing	\$3	\$2	\$3
Wages of labor used to make film	\$5	\$5	\$8

16. If the supply of turkeys in a particular November turned out to be unusually small, do you think a turkey shortage would result? Why or why not?
17. Elasticity Questions:
- a) In August, 1990, East German taxicab drivers were on strike demanding lower cab fares. What must the drivers have believed about the price elasticity of demand for taxi rides?
- b) In 1977 Brazil was supplying about one-third of the world's coffee exports. When a frost wiped out about 75 percent of Brazil's 1976-77 crop, the price of green (unroasted) coffee rose 400 percent. What was the approximate price elasticity of demand for coffee? Why was it so low?
- c) An athletic director at a college recently raised ticket prices from \$8 to \$10 per game. Sales went down 10 percent. The director said "... with the 25 percent increase in ticket prices, dollar volume has increased about 12 percent." Is this claim consistent with what you know about demand elasticity? Find the elasticity of demand in this case, assuming the demand schedule is stable.
- d) According to recent studies at M.I.T. and the University of Michigan, a 10 percent increase in the price of cigarettes leads to a 14 percent drop in sales to teenagers. What is the elasticity of demand for cigarettes among teenagers? Would you expect it to be this high for older smokers? Explain your answers.
- e) Suppose the price elasticity of demand for rental housing is 0.60 and the average rent increases from \$275 per month to \$325 per month. At \$275 per month, 100,000 rental units are rented. What percentage decrease in quantity demanded would you predict from this information. Approximately how many units would be rented at \$325 per month?
- f) Using the midpoint elasticity of demand formula, find the price elasticity of demand for the following situation: When the price of cellular phones was \$200, total sales in Ohio were 3500. When the price fell to \$180, sales rose to 3800.
18. In Marietta, the price elasticity of demand for bus rides is -0.5, the income elasticity of demand for bus rides is -0.1, and the cross elasticity of demand for bus rides with respect to gasoline is 0.2.
- a) Is the demand for bus rides elastic or inelastic with respect to the price of a bus ride? Why?
- b) Would an increase in bus fares increase the bus company's total revenue? Explain your answer.
- c) Describe the relationship between bus rides and gasoline. Explain your answer.
- d) If the price of gasoline increases by 10 percent with no change in the price of a bus ride, how will the number of bus rides change?
- e) If incomes in Marietta increase by 5 percent with no change in the price of a bus ride, how will the number of bus rides change?
- f) In Marietta, is a bus ride a normal good or an inferior good? Why?
19. Far fewer babies are currently offered for adoption in the United States than couples want to adopt. Would you call this a shortage? Why doesn't the price of an adopted baby rise? By what criteria are the scarce babies rationed to demanders?

20. After graduating, you land a plush job advising the president on economic matters. One day the president asks you for your suggestions about products to tax.
- a) The president asks you to produce a list of items to be taxed that will yield substantial tax revenue to the government and for which consumers pay a large amount of the tax. Without trying to name specific products, what are the general characteristics of the demand for the products that you will suggest be taxed? Why?
- b) After you discuss this first list with the president, the president realizes that this is an election year. As a result, the president changes your assignment a bit. Now the president asks you for a list of products that will still yield a lot of revenue for the government, but whose tax will fall more heavily on producers. Again, without trying to name specific products, what is the general characteristics of the supply of the product that would comprise your second list? Why?
21. What are the major economic effects of rent ceilings?
22. What are the economic arguments for and against drug prohibition?
23. Suppose the government wishes to support corn farmers by maintaining a price floor of \$5 per bushel. The market equilibrium price is \$4 per bushel. Using a supply and demand graph, show what happens to quantity demanded and quantity supply before and after the price floor is imposed. How exactly can the government maintain the price of corn at \$5? What are the social welfare implications of the price floor?
24. The city of Berkeley, California, imposes strict rent controls; there are no rent controls in Gainesville, Florida. Both cities are the home of large universities. In which city do you expect incoming first-year students to have the least trouble renting an apartment? Why?
25. The table below summarizes the labor market for unskilled workers in Ohio.

Hourly Wage	Quantity Demanded (millions of hours per week)	Quantity Supplied (millions of hours per week)
\$6.00	28	22
\$6.50	26	23
\$7.00	24	24
\$7.50	22	25
\$8.00	20	26
\$8.50	18	27

- a) What is the equilibrium wage and employment level in this market? How much unemployment occurs at the equilibrium wage?
- b) Suppose the Ohio state legislature imposes a minimum wage of \$8.00 per hour on this market. What is the new quantity demanded of labor? What is the new quantity supplied of labor? How much unemployment is created by the minimum wage?

26. Consider the market for beer as described by the following equations:

$$Q^d = 30 - 0.5P \quad (\text{demand})$$

$$Q^s = -1.5 + 0.25P \quad (\text{supply})$$

where Q is measured in millions of barrels per year and P is the price in dollars per barrel.

- a) What is the equilibrium price and quantity of beer? Illustrate the equilibrium graphically.
- b) Calculate consumer and producer surplus at the equilibrium price. Identify CS and PS on your diagram.