MIDTERM EXAMINATION 1

Intermediate Microeconomics
(ECON 520)

September 18, 2001 Professor D. Weisman

There are two parts to this examination weighted 50 points each. Please write legibly and think carefully about your answers. You may find that graphical and/or mathematical analysis will assist you in answering some of these questions.

Part I. Multiple Choice (50 points). Indicate your choice for the best answer to each question on both the standardized answer sheet provided and the examination so that you have a record of your answers.

1. Which of the following is a normative statement?
   - a. A course in intermediate microeconomics improves scores on the LSAT (Law School Admissions Test).
   - b. Colleges that pay their football coaches more than their economics professors tend to win more football games.
   - c. Smoking restrictions on airline flights have reduced the number of respiratory-related illnesses.
   - d.* Requiring all students to take at least one semester of Calculus is a bad idea.
   - e. None of the above.

2. Hurricane Phillip in 1950 and Hurricane Mikey in 1998 both caused damage estimated at $20 billion in nominal dollars. This suggests that
   - a. the two hurricanes were equally costly.
   - b. Hurricane Mikey was more costly than Hurricane Phillip.
   - c.* Hurricane Phillip was more costly than Hurricane Mikey.
   - d. none of the above are true.

3. MBA applications tend to decrease during upturns in the economy because
   - a. the opportunity cost of earning an MBA is higher during these times.
   - b. high paying jobs are more plentiful during these times.
   - c. the opportunity cost of earning an MBA is lower during these times.
   - d. student loans are more plentiful during economic downturns.
   - e.* a and b.

4. New government regulations that requires automobile manufacturers to increase the gauge of the steel used in producing automobiles will result in a
   - a. a decrease in the equilibrium price of automobiles.
   - b.* an increase in the equilibrium price of automobiles.
   - c. no change in the equilibrium quantity of automobiles.
   - d. an increase in the equilibrium quantity of automobiles.

e. none of the above.

Use the following information to answer the next four questions:

The demand for books is: $Q^D = 60 - 1P$
The supply of books is: $Q^S = 20$

5. What is the equilibrium price of books?
   a. 10
   b. 20
   c. 25
   d.* 40
   e. none of the above.

6. What is the equilibrium quantity of books sold?
   a. 25
   b. 50
   c. 40
   d.* 20
   e. none of the above

7. The price elasticity of demand at the market equilibrium is
   a. inelastic.
   b.* elastic.
   c. unitary elastic.
   d. inferior.
   e. none of the above.

8. What is consumers' surplus at the market equilibrium?
   a. 400
   b. 650
   c. 500
   d. 625
   e.* none of the above

9. This question is based on our classroom discussion of the article entitled "The Demand For Illicit Drugs." An increase in government efforts to spray Marijuana fields to reduce yields would likely result in
   a. an increase in the equilibrium price of Marijuana.
   b. a decrease in the equilibrium price of Marijuana.
   c. a decrease in the equilibrium price of Cocaine.
   d. an increase in the equilibrium price of Cocaine.
   e.* a and c.

10. Suppose that the price elasticity of demand for electricity is -2 at the market clearing price and that supply is perfectly inelastic. What will result from a price ceiling that is 10 percent below the market-clearing price?
    a. Consumers will be better off.
    b. Consumers may be better or worse off.
    c. A shortage equal 20 percent of the market clearing quantity.
    d.* a and c.
    e. b and c.

11. The demand for Bulldog Beer rises when income rises, *ceteris paribus*. What type of good is Bulldog Beer?
    a.* normal.
    b. inferior
    c. posterior.
    d. substitute.
    e. complement.

12. According to economist Thomas Sowell, a government regulation that requires child safety seats on commercial airplanes would be more likely to increase the number of lives lost if
    a. airline travel is an inferior good .
    b. the own price elasticity for automobile travel is equal to -1.
    c. the cross-elasticity of automobile travel with respect to the price of airline fares is relatively small.
    d.* the cross-elasticity of automobile travel with respect to the price of airline fares is relatively large.
    e. airline travel is a normal good.

13. A business firm faces a demand curve for its product that is given by Q = 16-P. The firm implements a small price change that results in a decrease in both revenues and consumers' surplus. This implies that the
    a. price was reduced and the initial price was greater than 8
    b. price was increased and the initial price was greater than 5.
    c. price was reduced and the initial price was less than 8.
    d.* price was increased and the initial price was greater than 8.
    e. none of the above.

14. The price elasticity of demand for non-durable goods tends to be
    a. the same in the long-run and the short-run.
    b.* greater in the long-run than in the short-run.
    c. greater in the short-run than in the long-run.
    d. a nonnegative value (either positive or zero).
    e. none of the above.

15. Suppose that price is reduced by 20 percent and the quantity demanded increases by 40 percent. The implied price elasticity of demand is

a.* -2.
b. -4.
c. -1/2.
d. -1/4
e. none of the above.

16. The price elasticity of long-distance telephone service is –0.6 and the cross elasticity of long-distance telephone service with respect to the price local telephone service is –0.2. Price changes are implemented that result in an increase in the quantity demanded of long-distance telephone service of 10 percent. If the price of local telephone service is reduced by 20 percent, what is the implied change in the price of long distance telephone service?
a. a 10 percent increase.
b.* a 10 percent decrease.
c. a 20 percent increase.
d. a 5 percent decrease.
e. none of the above.

Use the following information to answer the following 3 questions.

Suppose that Giddy-Up Graphics estimates that the demand function for its product given by $Q = 200P^{-1}$, where P is price and Q is the quantity demanded.

17. What is the price elasticity of demand for Giddy-Up's product at a price of 4.
a.* -1.
b. -1/2.
c. 0.
d. -200.
e. none of the above.

18. What is the maximum level of revenues that Giddy-Up can generate in this market charging a single uniform price for its product.
a. 100.
b.* 200.
c. 300.
d. 400.
e. none of the above.

19. Suppose that Giddy-Up incurs a cost of 2 for each unit of output that it sells. The maximum amount of profit that Giddy-Up could realize is approximately equal to
a. 100.
b.* 200.
c. 300.
d. 400.
e. none of the above.

20. Suppose that the demand for apartments is given by $Q = 100 - 2P + q$, where Q is quantity demanded, P is price and q is an index of quality. What is consumers' surplus when $P = 30$ and $q = 20$?
    a.* 900.
    b. 1800.
    c. 600.
    d. 450.
    d. none of the above.

Part II. Problems (50 points). Show all of your work to receive partial credit. Write legibly and be precise with your answers.

1. Analysis of Supply and Demand.

    a) Two points on a demand curve are $P_1 = 0$, $Q_1 = 24$ and $P_2 = 8$, $Q_2 = 8$. Find the equation of the linear demand curve: $Q^D = a – bP$, where a and b are constants?

    b) Graph the demand curve you derived in part a). Be precise in labeling the vertical and horizontal intercepts.

    c) Suppose that the supply function is given by $Q^S = P + ½T$, where T is an index of technological progress in the industry. Suppose that the equilibrium price in this market is equal to 6. What is the level of technological progress in the industry, T*?

    d) What will happen to the price elasticity of demand at the market equilibrium as technology advances, *ceteris paribus*.

2. The demand for Marijuana is given by $Q^D = 100 - 1P + I$, where Q^D is quantity demanded, P is price and I is income. The supply of Marijuana is given by $Q^S = P - ½E$, where Q^S is quantity supplied and E represents the dollar amount spent by the government to eradicate Marijuana fields.

    a) Derive an expression for the equilibrium price of Marijuana and the equilibrium quantity of Marijuana?

    b) What is the effect of each \$1 dollar increase in E on the equilibrium price and quantity of Marijuana?

    c) Compute the price elasticity of demand at the market equilibrium when $I = 20$ and $E = 40$. What effect would a small decrease in E have on industry revenues?

    d) Assume for the purposes of answering this question that Marijuana and Heroin are substitutes. What effect will increasing E, *ceteris paribus*, have on drug use in this county. Is this policy likely to save lives?