

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 240 points (to be scaled down to 200 points) and is scheduled to take 120 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) Why do firms set  $MR = MC$ ?

B) Explain the difference between implicit costs and explicit costs.

2) (12 points) Answer EITHER Part A OR Part B.

A) I was offered a free lunch last Thursday. I turned it down. Use logic and terminology from economics to explain why I turned down the free lunch.

B) On Tuesday of this week, the Democrats who met with President Trump said all of them agreed that the government will spend \$2 trillion on infrastructure. I predict this will not happen. Use language and terminology from economics to explain why this is unlikely to occur. (The current GDP is about \$21 trillion.)

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

A) What value would you expect for the own price elasticity of gasoline? Explain why you chose that number.

B) What value would you expect for the income elasticity for hamburgers? Explain why you chose that number.

4) (16 points) Use the table to the right to calculate EITHER the elasticity in Part A OR the elasticity in Part B. Only one pair of rows will work for Part A and only one pair of rows will work for Part B. Tell me how you determined which rows you used. Show all work. What does that number tell you and how do you know that?

A) Own-price elasticity using arc formula

B) Cross-price elasticity using point formula

Pcats	Pdesks	Income	Qcats
\$20/cat	\$200/desk	\$1000	10
\$10/cat	\$100/desk	\$2000	15
\$10/cat	\$100/desk	\$1000	30
\$20/cat	\$100/desk	\$1000	20

5) (18 points) Answer EITHER Part A OR Part B.

A) Draw the supply and demand for school buses. Illustrate the effects of an increase in the price of trucks for long-haul shipping. Explain why the curve(s) moved as drawn. What happens to the price of a bus and the quantity sold?

B) Draw the supply and demand for root beer. Illustrate the effects of the price of Coke going up. Explain why the curve(s) moved as drawn. What happens to the price and quantity of root beer sold?

6) (18 points) Answer EITHER Part A OR Part B.

A) Draw the supply and demand for loanable funds for a bond. Suppose that the company who issues the bond looks like it is a riskier company than originally thought. Illustrate the effects of that on the

diagram. Explain why the curve(s) moved as drawn. What happens to the price of the bond and the implicit rate of return on it? Briefly explain your logic.

B) Draw the supply and demand for loanable funds for US government bonds. Illustrate the effects of the US government borrowing more. Explain why the curve(s) moved as drawn. Explain why the curve(s) moved as drawn. What happens to the price of the bond and the implicit rate of return on it? Briefly explain your logic. (If you had *Principles of Macroeconomics*, you might recognize this as one step in crowding out.)

7) (18 points) Answer EITHER Part A OR Part B.

A) Copy the table into your answer booklet. Fill it in. Show all work. If there is no work, then state how you got the answer. Assume this firm is in a perfectly competitive industry. How many people should this firm hire if the wage rate was \$450 per unit of labor? Explain your logic. If you are stuck and need one number to calculate another number, take a guess and write that you guessed as your explanation.

L	$TP_L$	$MP_L$	Price	TR	$MRP_L$
4	100	20	30	3000	600
				3900	450
	160	10			

B) Find the Cournot-Nash equilibrium or equilibria (if they exist) for the following payoff matrix. Explain how you reached that conclusion.

		Yankees	
		High Price	Low Price
Mets	High Price	5, 8	6, 4
	Low Price	9, 7	2, 3

8) (20 points) Answer EITHER Part A OR Part B.

A) Draw the supply and demand for labor. Illustrate the effects of a decrease in the amount of capital. Explain why the curve(s) moved as drawn including any assumptions you made about labor and capital. What happens to the price of labor and the amount of labor used?

B) Explain why the rental rate of capital is the  $MRP_K$ . Also, explain why  $MP_H/P_H = MP_K/P_K$ .

9) (20 points) Answer EITHER Part A OR Part B.

A) Suppose a bond has a coupon rate of 5%, a face value of \$1000, a maturity in 3 years, and the interest is paid annually. Set up the equation which would determine how much you would be willing to pay if you were willing to settle for a 4% return. Briefly explain how you knew what went where in the equation. Without doing the calculation, would you pay more than \$1000, \$1000, or less than \$1000. Explain your logic.

B) Suppose you have one year left before you graduate. That year will cost \$30,000. If you take a job

now, you will earn \$36,000 per year. If you graduate, you will earn \$48,000 per year. If you take the job now, you will work for 48 years, but if you wait until you graduate, you will work for 47 years. Set up the present value calculation which would enable you to determine the implicit rate of return you get on your last year of school. State how you knew where each number went and how you could use it to find the return if I had asked for the return. Do NOT actually calculate the return.

10) (24 points) Answer EITHER Part A OR Part B.

A) Draw the supply/demand diagram for hats. Illustrate the effects of a quota on hat production. Explain why the graph changes as drawn. Find the new price, quantity, consumer surplus, producer surplus, and deadweight loss. Briefly explain how you found them.

B) Draw the supply/demand diagram for prescription drugs. Illustrate the effects of a price ceiling on prescription drugs. Explain why the graph changes as drawn. Find the new price, quantity, consumer surplus, producer surplus, deadweight loss, and the black market profits. Briefly explain how you found them.

11) (34 points) Answer EITHER Part A OR Part B.

A) Draw a monopolistically competitive firm's ATC/AVC/AFC/MC/D diagram assuming it is in the long-run equilibrium. Find the quantity produced, and price charged. State how you found them and how you know they are in the long-run equilibrium. Illustrate the short-run effects a decrease in the price of raw materials. Explain why the curve(s) moved as drawn, including how you determined which type of cost it was. Find the new price and quantity sold.

B) Draw a monopolistically competitive firm's ATC/AVC/AFC/MC/D diagram assuming it is in the long-run equilibrium. Find the quantity produced, and price charged. State how you found them and how you know they are in the long-run equilibrium. Illustrate the short-run effects an increase in the salary of the Vice President of the company. Explain why the curve(s) moved as drawn, including how you determined which type of cost it was. Find the new price and quantity sold.

12) (34 points) Answer EITHER Part A OR Part B.

A) Draw a perfectly competitive firm's ATC/AVC/AFC/MC/D diagram and the industry  $S_{SR}/D$  assuming the firm is making positive profits. Find the quantity produced, price charged, and profits. State how you found them. What will happen over time? Why will that happen? Illustrate the effects of that on the graph. Explain why the curve(s) moved as drawn. Find the new price and quantity sold.

B) Copy the table into your "bluebook". Fill it in. Show all work. If there is no work, then state how you got the answer. If you are stuck and need a number to get another number, guess and tell me that you got the number by guessing.

Q	TC	TVC	ATC	AVC	AFC	MC
100	1000	700				6
150						7
	2700		9			