First Homework/Readings Packet, ECON 5313, Darren Grant, Summer 2002.

Your homework/readings packet will contain most or all of the following: recommended reading from the book, a newspaper/magazine article to read, practice problems for the day's lecture, and homework problems. All work in the packet is assigned to be prepared for the next class period, except for the practice problems, which will be worked in class the night that the homework packet is handed out. I will invite student volunteers to present answers to the homework problems to the class.

Book Reading: The first and second classes are mostly about costs; this is in Chapter 5, and you should read it. Also, we will do some review of demand in our first class; this is in Chapter 4, and if the material seems unfamiliar to you, then read this chapter as well. Chapters 1-3 in the book are background material. This may also be useful "refresher" reading, though some of the writing is a little dense.

Article: Thrift Sale article.

Practice Problems:

1. (Mansfield, adapted) In October 1986, the Congressional Budget Office published a study indicating that the marginal cost of a 1989 flight by a space shuttle would be about $48 million.

a) What kinds of expenses are included in this figure? What kinds of expenses are not included?

b) Consider the costs of the shuttle itself (as opposed to the costs of the launch, astronauts, etc.). Should the entire cost of the building and maintaining the shuttle be included in the marginal cost figure? Should any of the costs of building and maintaining the shuttle be included? If so, which?

c) NASA is offered $50 million by a foreign government to launch one of their (non-military) satellites into orbit. Is the marginal cost figure relevant for determining whether this flight would be profitable for NASA? Or should, instead, some other cost figure be used?

d) Several firms are considering offering private flights into space. (Really!) For the purposes of deciding whether to begin offering private space flights, is marginal cost the relevant cost figure? Or should, instead, some other cost figure be used?

2. Consider a perfectly competitive market, in which all firms have the same costs (identical cost curves). A set of statements is listed below. For each statement, answer with either #1, #2, or #3, and give a brief explanation why.
    1) This statement is not correct, or only rarely correct (say, by happenstance).
    2) This statement is correct only when the market is in long run equilibrium.
    3) This statement is usually or always correct, not just when the market is in long run equilibrium.

a) Firms earn zero accounting profit.

b) Firms would stop production immediately if the price fell by even a little bit.

c) Firms choose to produce the quantity that minimizes their average total costs.

d) If the price goes up, firms will choose to produce more.

e) The firm can sell all units it makes at the market price.

Homework Problems.

1. Work problem #5-5 in your book.

2. Consider a perfectly competitive firm where, for simplicity, we can think of all costs as being labor costs, and there is only one worker. The worker can make one unit of the product in 4 hours of work. The firm pays the worker $20 per hour, up to 40 hours per week (straight time). After that the worker is paid overtime, which is "time and a half," or $30 per hour. The firm also provides health insurance for its employee (the only fringe benefit), at a cost of $50 per week (no matter how many hours are worked).

The firm has committed to paying for health insurance for the worker's entire one year contract, but can choose the number of weekly hours its employee will work; this can be less than 40 hours or more than 40 hours, as the firm chooses. All units refer to weekly output. Since the worker takes 4 hours to make one unit of the product, the worker works overtime if he makes more than 10 units per week.

a) Is the wage a fixed cost or a variable cost? Is the health insurance a fixed cost or a variable cost?

b) What is the Marginal Cost of a unit produced during straight time? What is the Marginal Cost of a unit produced during overtime?

It turns out ATC is at its lowest if 10 units are produced.

c) Calculate the Total Cost, the Average Total Cost, if 10 units are produced.

d) In deciding how many hours the worker should work, the firm has three choices: 1) don't work the worker at all (0 hours); 2) have the worker work at the regular wage but no overtime (between 1 and 40 hours); 3) have the worker work overtime (41 hours or more). At a price of $100, what will the firm choose? Why?

e) At a price of $100, does the firm prefer to stay in or exit the market in the long run? Why?

3. When I was a graduate student, I used to volunteer for a charity in town that provided services to the needy. The charity ran a thrift store, selling some of the finer clothes that are donated to them. (Finer being understood in a charitable context.) My last year there they had revenues of $20000 and expenses (rent, utilities, labor) of $19000. In deliberating whether to keep the thrift store open, some board members argued against, saying in effect, "They could have given those clothes to clients or done something else with them. Therefore, they should include a value for the clothes when calculating expenses, or else true (economic) profit will be overstated." Other board members said in effect, "You are wrong. The clothes are a sunk cost. They have already been given to the charity, and now the charity should merely try to get the most money they can for them. Since the store makes $1000 profit, it should remain open." Who is right?

Second Homework/Readings Packet, ECON 5313, Darren Grant, Summer 2002.

Book Reading: Read Chapter 6, especially pp. 128-140, for next class.

Article: Drug Makers article. Three of the four market structures that we will discuss next class are illustrated in the article. See if you can identify them as you read the article, and try to notice how firm behavior differs in the three different market structures.

Practice Problem:

1. Consider a perfectly competitive market, in which all firms have the same costs (identical cost curves). A set of statements is listed below. For each statement, answer with either #1, #2, or #3, and give a brief explanation why.

      1) This statement is not correct, or only rarely correct (say, by happenstance).
      2) This statement is correct only when the market is in long run equilibrium.
      3) This statement is usually or always correct, not just when the market is in long run equilibrium.

a) Firms earn zero accounting profit.

b) Firms would stop production immediately if the price fell by even a little bit.

c) Firms choose to produce the quantity that minimizes their average total costs.

d) If the price goes up, firms will choose to produce more.

e) The firm can sell all units it makes at the market price.

Homework Problems:

1. Work problems #5-2 and #5-3 in your book.

2. The Law of Diminishing Returns applies to each of the following situations. Explain how. Identify, in each case, the "output," the "variable input," and the "fixed factor."

a) Trying to grow more soybeans by fertilizing more.

b) Scraping old paint off a wall.

3. The cost curves for Chopin's Bedpans are given below.

a) Identify the profit maximizing quantity when the price is $6, $8, and $10. These are three different quantities–identify them as QA, QB, and QC.

b) Does the firm make positive, zero, or negative economic profit at a price of $6? $8? $10?

c) What will the price be in long run equilibrium, if Chopin's Bedpans costs are typical for the market, and the market is perfectly competitive?

d) How much profit would Chopin's Bedpans make if the price was $10 and it produced quantity QA instead of quantity QC?

Third Homework Packet, ECON 5313, Darren Grant, Summer 2002.

This homework packet is more expansive than the others have been, since there will be no lecture next class–all we do is discuss readings, go over homeworks, and answer questions.

Book Reading: Read Chapter 6, especially pp. 140-150, not for the next class, but for the class following. Additional material about Oligopoly, game theory, and Nash equilibrium (yes, that Nash) is found in Chapter 9, if you are interested. We will not cover that chapter in this class (you are not responsible for that material).

Article: "Check, Please." This article has a lot about costs, market structure, and the influence of market structure on firm behavior. I have included some questions about the article for you to think about–we'll discuss these in class.

a) What is the market structure of the restaurant industry? Why?

b) Does Chanterelle, the Waltucks' current restaurant, earn positive, zero, or negative economic profit? Give an explanation for your answer.

c) In the fourth paragraph, the claim is made "With a restaurant, profits are small." What are they saying in economic terms? Is this claim consistent with economic theory or not?

d) David Waltuck says, "profit margins are low in the restaurant business generally." With profit margins, he is comparing price to costs. Which costs: MC, ATC, or something else?

e) Karen Waltuck says, "The truth is that what (customers) are paying for is space and time, which are just irreducibly expensive in New York." Exactly what cost or costs is she referring to? Are they fixed or variable costs?

f) Explain how profit can be low in the restaurant business if prices are so high.

g) "Key money"–is it a fixed or variable cost? A short run or long run cost? Give an example of non-variable labor costs. Credit card fees–are they fixed or variable costs? Short run or long run?

h) Near the end of the article they talk about "turns" generated by each table. Based on that discussion, give an explanation why restaurants will charge $2.50 or more for a simple cup of after-dinner coffee.

Practice Problems:

1. Farmer Chow grows corn and sells it in a perfectly competitive market. She irrigates with water purchased from neighbors. Because of an argument, she recently switched from one neighbor water supplier to another. The new neighbor (being less aquatically endowed) changes a higher price per acre-foot for the water.

a) Does this represent a change in fixed or variable costs (for this season)?

b) Does Farmer Chow respond by raising the price of her corn?

c) Does Farmer Chow respond by changing the quantity she produces?

d) Would Farmer Chow's behavior (the answers to b and c) have been different if the increase in costs involved fixed costs but not variable costs? If so, how?

e) Would Farmer Chow's behavior have been different if she was not in a perfectly competitive market? If so, how?

2. Two service industries are auto repair and auto towing. In most towns one can find many towers and many auto repair shops.

a) What is the *primary* reason can the latter market (towing) be considered perfectly competitive, while the former market cannot?

b) What is the market structure of the auto repair market in the Metroplex? How much economic profit do most auto repair shops make in the long run?

c) Which of the following behaviors would be observed in the auto repair market?

- Firms cannot choose their price
- More elastic customers get charged a *higher* price
- Firms would generally like to have more customers
- Barriers to entry make it difficult for new firms to enter the market

d) Which of the behaviors listed above would typically be observed in a perfectly competitive market?

Homework Problems:

1. My friend says, "It is a commonly known fact that the cost of the food is only about 1/3 of the price of a restaurant meal. Therefore, all restaurant owners are making a huge profit."

a) What other significant economic costs, besides the food cost, does the owner of a small restaurant incur?

b) Even if we know nothing about the actual costs of restaurants in town–what is the best simple piece of evidence that all restaurant owners aren't making a huge profit?

c) Often, the response I get to part b) of this question is as follows: "Restaurants are a perfectly competitive industry, so they make zero economic profit." This is theory, not evidence, so it doesn't

answer the question. However, even as theory, there are two things wrong with the above statement. What are they?

2. In the hothouse working late one evening, Dr. Ima Masing discovers, to her surprise, the secret to growing the Bonsai Loblolly Pine Tree, which had eluded botanists for years. Dr. Masing can produce 10 Bonsai Pines in one hothouse in one year. Each hothouse costs her $2000 per year, and the cost of the labor, water, and fertilizer is $600 per tree.

a) Currently, what is the market structure of the Bonsai Pine industry?

b) Currently, Dr. Masing maximizes her profit by selling 50 trees per year at a price of $1000 each. What is her (yearly) profit?

c) Why doesn't Dr. Masing produce 60 trees?
    1) The additional trees would be especially expensive to produce.
    2) She can't find buyers for any more trees.
    3) She doesn't want to lower her price to attract more buyers.

Then, suddenly, Dr. Masing's lab assistant posts her Bonsai Pine growing secret on the Internet for all to read. Now anyone can grow a Bonsai Pine tree.

d) What is the market structure of the industry now?

e) What will the price (in $) of Bonsai trees be in the long run?

Supplemental Question. We will go over this in class and I will also collect a copy from each student and look over it. So, bring two copies to class, one to go over, and one to turn in.

In this problem we will estimate the economic costs of driving for your car (if possible). The Web site **edmunds.com** contains a section that gives values for used cars that aren't too rare or too old. Pick a car: yours, a friend's, whatever. It must meet three criteria: 1) it's on the used car section of the Web site, 2) it must not be the first year of the model, and 3) the same model, one year older, must also be on the used car section of the Web site. We will consider the following costs of driving: gas, maintenance, depreciation, insurance, and interest.

At the top of your sheet, put *all* of the following: your annual insurance cost, annual mileage, gas mileage, typical annual maintenance costs for a car your age and type, the current price of the gas that you put in your car, the replacement value (retail) of your car, the value of the same car one year older with the same mileage, and the value of the same car one year older with an additional year's mileage. These last three come from the web site–you'll have to use the used car vehicle appraiser. I'd tell you exactly how to do it, but then you'd miss out on the fun of messing around with it until you figure it out. Then do the following.

a) Calculate the per mile cost of gas.

b) Calculate the per mile maintenance cost.

c) Calculate the average cost per mile of insurance.

d) Calculate the "opportunity cost of capital," that is, the interest paid on the money you borrowed to buy the car, or the interest foregone on the money you have invested in your car, for one year. You can probably find an interest rate on the web site or you can make up your own (reasonable) interest rate.

e) Calculate the average interest cost per mile.

f) Calculate *total* depreciation on the car as the difference between the retail value of the car and the value of the same car one year older with an extra year's mileage.

g) Calculate *age* depreciation as the difference between the value of the car and the value of the same car one year older with the same mileage.

h) Calculate *use* depreciation as the difference between total depreciation and age depreciation.

i) Calculate the *average* depreciation cost per mile.

j) Calculate the *marginal* depreciation cost–the amount the car depreciates for each mile it is driven.

k) Classify each of the following costs as either fixed or variable: gas, maintenance, insurance, interest, age depreciation, and use depreciation.

l) Calculate the average costs of driving the car, per mile. Use (some of) your results in a)-j).

m) Calculate the marginal costs of driving the car, per mile. Use (some of) your results in a)-j).

n) The State of Texas reimburses mileage for private cars driven on state business at the rate of 34¢ per mile. If no one else needed to use your car, and you needed to travel on state business, should you drive your own car or take a state car of the same level of quality, safety, and comfort?

o) An analog here to "increasing output with existing capacity" would be driving faster. We know that the law of diminishing returns applies whenever a firm tries to increase output by using more of a variable input with its existing capacity. What is the law of diminishing returns? In the current situation, what is the fixed factor? The variable input? The output? How does driving faster exhibit diminishing returns?

Homework Packet 4, ECON 5313, Darren Grant, Summer 2002.

Book Reading: For next week, read Chapter 7, about pricing in non-competitive markets. We will spend the week on it.

Article: No article this week.

Practice Problems:

1. Consider a non-cooperative duopoly in a certain kind of wine. (Reunite, Boone's Farm–you name it.) The wine must be bottled, sit in a temperature controlled facility for six years, and then be sold and consumed. The product must be consumed six years after bottling; it tastes like sugar water after five years, and like vinegar after seven.

a) What oligopoly model most closely describes the industry?

One company discovers that by adding just a touch of Paul Newman's Industrial Strength Spaghetti Sauce the wine ferments much quicker. With this accelerated fermenting process, the wine matures in three years. It must be consumed three years after bottling; it tastes like sugar water after two years and like vinegar after four. Thus, under accelerated fermenting, the wine sold by the one company in the year 2002 would have been bottled in 1999; the other company's wine bottled in 1996.

b) If the company adopts accelerated fermenting, then what oligopoly model most closely describes the industry?

c) Adopting accelerated fermenting will have three effects listed in our discussion of strategic behavior: a direct effect, a strategic effect, and a flexibility effect. Describe each effect, how it applies in this example, and whether or not it is beneficial for the firm that adopts accelerated fermenting.

2. Below I have drawn a marginal cost curve for an oil producer. On it I have put the price that would prevail if the market were competitive, and the price the cartel OPEC seeks to set. On the graph, put in: QA) the quantity produced in the competitive market, QB) the quantity the firm would like to produce at the OPEC price, and QC) approximately or roughly what the firm's oil "quota" would be. (You can't know this last one exactly, only approximately.)

Homework Problems:

1. Work Problem 6-9 in your book.

2. Price has suddenly risen in an industry, and the firms in that industry are accused of forming a cartel in order to raise price and profits. You are called to testify as an expert witness in the resulting antitrust case. The only thing that you know about the industry is that it is currently operating at full capacity, i.e., each firm is operating in the vertical part of its MC curve. Do you know enough to testify? If you did testify, what would you say? Why?

3. (Besanko et al., modified) An established firm is considering expanding its capacity to take advantage of recent demand growth. It can do so by purchasing fungible, general purpose assets that can be resold at close to their original value if necessary. Or it can invest in highly specialized assets that, once they are put in place, have no alternative use and no salvage value.

a) Assuming that each choice results in the same production costs once installed, under what choice is the firm likely to encounter a greater likelihood that its competitors will also expand their capacities?

b) Discuss the primary advantage and primary disadvantage of each option. Under what circumstances would the fungible assets be preferable? Under what circumstances would the specialized assets be preferable?

Homework Packet 5, ECON 5313, Darren Grant, Summer 2002.

Book Reading: This class and the next class we are relying on Chapter 7. For next class, focus on the material on price discrimination.

Article: No article this week.

Practice Problem:

1. Below is a firm price setting graph, with five points identified, points A-E.

a) Identify the point that illustrates
the profit maximizing quantity (by letter).

b) On the graph, identify (on the price axis)
the price that the price setter would
choose.

c) Does this firm make a positive, zero, or
negative economic profit?

d) Identify the point where, if this firm made
this quantity, it would earn zero economic profit.

Homework Problems:

1. Work Problem 7-8 in your book.

2. Right now there are three firms in a market, all making the same product (a homogenous product). All three firms charge $10 for a unit of the product. It turns out that, at this price, the combined profits of all three firms is at its largest. (Another way of putting this is that total producer surplus is maximized at this price.) A set of statements is given below. For each, indicate whether it is true or false. If it is true, explain why. If it is false, explain why, or correct the statement if possible.

a) This is a perfectly competitive market structure, because everyone charges the same price.

b) If this market was a monopoly, the firm would charge a price of $10.

c) If this market were perfectly competitive, the market price would be more than $10.

d) The three firms in this market are probably colluding.

3. The price of malpractice insurance for physicians generally does not depend on the number of patients they see; thus it is a fixed cost and not a variable cost. Malpractice insurance is very expensive for physicians in many specialties (including obstetrics, which I study in my research). In this question, we will explore what would happen in the short run if obstetricians were charged

for malpractice insurance by the delivery instead of by the year. We presume the market structure for the obstetrical services market is monopolistic competition, which is a reasonable assumption.

a) Draw a standard pricing graph for this firm, and illustrate the profit maximizing price and quantity. This will be our "before" graph–when insurance is charged by the year.

b) When the price of malpractice insurance becomes a variable cost, some curves on the pricing graph shift, and the optimum price and quantity will change as well. Illustrate these changes on a new graph. This is the "after" graph–when insurance is changed by the delivery.

c) If the market for insurance is reasonably competitive, then the total amount of money paid for insurance shouldn't change "after" if the obstetrician continues to perform the same number of deliveries as "before." In that case the economic profit earned by the obstetrician would not change. If the obstetrician chooses to change the total number of deliveries he performs, instead, his profit must therefore be _____ than before.

d) Can you tell whether that "after" economic profit is positive, negative, or zero?

Homework Packet 6, ECON 5313, Darren Grant, Summer 2002.

Book Reading: Read Chapter 8 for next class.

Article: No article this week. Don't get worried–we'll have one next week.

Practice Problem:

1. When I was in graduate school, many moons ago, my wife Marsie tutored as her primary means of earning income. She used three different methods of charging for her services.

- $12 per hour for each session
- $15 per hour for the first four sessions, the fifth session free
- $17 for the first session, $12 for every session after that

Describe the advantages and disadvantages of each method. Which one worked best? Why?

Homework Problems:

1. Work problem 7-3 in your book.

2. Specialty booksellers, that deal in rare and hard-to-find books, are geographically dispersed throughout the country. The search costs of trying to compare prices for specialty books from different sellers in different cities used to give each bookseller a significant degree of market power. However, with the growth of the Internet, specialty booksellers can now post their inventories and prices on-line, which makes it much easier for customers nationwide to comparison shop for specialty books. In either case, entry into the market is not difficult.

a) Describe the (approximate) market structure of the industry before and after the Internet.

b) What happens to firms' demand elasticities as use of the Internet grows? What happens to price?

c) How does long-run profit change as the market becomes more competitive?

d) How could specialty booksellers profitably price discriminate between Internet users and non-users?

3. In Leon County, Fla., where I went to graduate school, the public library has an interesting way of charging for parking. The first hour is free, then the price for each <u>additional</u> hour is higher than for the hour before it. So it costs $1.00 for the second hour, and $2.00 for the third hour, and $3.00 for the 4th hour, etc. (The charge for a total of 4 hours of parking would be $6.00.)

Most parking garages use a different set of charges. The first hour of parking is the most expensive, then the price for each <u>additional</u> hour of parking is less than for the hour before it. So it might cost $3.00 for the first hour of parking, $2.00 for the second hour, $1.00 for the third hour, and free for every additional hour. (The charge for a total of 4 hours of parking would also be $6.00.)

a) How much, approximately, is the MC per car of parking?

b) Will customers park more hours under the first scheme or the second?

c) In general, which scheme makes more money? Why?

Homework Packet 7, ECON 5313, Darren Grant, Summer 2002.

Book Reading: None.

Article: Read the Supermarkets article for next time. Here are some questions to think about as you read the article.

a) This article contains examples of each of the three general ways firms can increase their profits: increasing demand for their product(s), cutting costs, and price discrimination. Give at least one example, from the article, of each.

b) If profit margins continue to be higher, what do you expect to see in the grocery business over time?

c) In essence, Dorothy Lane practices more, and more sophisticated, price discriination than it used to. How does it do this? Who benefits from Dorothy Lane's price discrimination? Who, if anyone, is hurt by it?

d) Dorothy Lane has been able to reduce inventory by 35%. For Dorothy Lane, what is the opportunity cost of holding inventory? Is this a fixed or a variable cost? How does reducing inventory lower costs?

e) In your opinion, if you had to choose, has Dorothy Lane mostly gotten better over time at *creating* value, or at *capturing* value? Why?

Practice Problems:

1. Work problem 8-9 in your book.

2. Work problem 8-10 in your book.

Homework Problems:

1. Work problem 5-12 in your book. Why did I assign this problem now, and not before? How does the royalty agreement between the firm and the author help create value? How does it limit the creation of value?

2. Waiting in line is a common phenomenon in many markets. Let's analyze this phenomenon from a value added perspective.

a) What are the primary costs–to the firm and to customers–of making customers wait? In what circumstances will these costs be relatively large? Relatively small?

b) What are the primary benefits of making customers wait? In what circumstances will these benefits be relatively large? Relatively small?

c) Based on your assessment of costs and benefits, discuss how a firm should go about determining whether its wait times are too large, too small, or about right, from the perspective of maximizing value added.

d) Waits for doctor visits are typically longer than for haircuts, and overbooking doctor's appointments is much more common than overbooking haircuts. Discuss why this is preferable from a value added perspective.

e) Most people have health insurance, and pay only a small "co-pay" for each doctor's visit. How does this fact affect the incentive to create value, and the ability to capture the value created, by lowering waiting times in doctor's offices? Why aren't these same problems observed regarding waiting times for haircuts?

3. Commonly, drycleaners charge more for cleaning a women's blouse than for cleaning a man's shirt.

a) Give two possible explanations for this based on the perfectly competitive market. If the market is perfectly competitive and in long run equilibrium, what must explain the difference in prices?

b) Give an alternative, non-competitive explanation for the difference in the price of drycleaning. What must be true in order for this explanation to work?

Supplemental Problems: Keep a copy for yourself and turn in a copy in class. Show your work.

1. Work the following problem and try not to think about what medication I must have been on when I wrote it.

Each island in a chain of 100 islands in the Pacific has one manufacturer of "happy bread," a bread made out of poppy seeds that makes you very, very happy. On each island are six potential customers. One of these will pay $6 (or less) for a loaf each day, one will pay $5 each day, one will pay $4 each day, one $3, one $2, and one $1. The machinery for happy bread allows the manufacturer to make up to four loaves (and no more) per day at a marginal cost of $1.50 per loaf; the fixed cost is $2 per day. Initially, pirates roam the seas and so it is not possible for a manufacturer on one island to sell bread to another island. So each manufacturer is a monopoly on its island.

a) What rule of thumb does the firm follow in setting the price in a monopoly? What is the price of happy bread? How many loaves does the monopolist make? How much profit is earned by the monopolist?

As part of the war on terrorism, George Bush, Tom Ridge, the CIA, FBI, AFL/CIO, and BMI/ASCAP rid the seas of pirates. Now it's easy to sell happy bread on any island, and since transport is very inexpensive, the market is essentially perfectly competitive.

b) What price-setting rule does the perfectly competitive market obey in the short run? What is the price of happy bread? How many loaves does each firm make? How much profit does each firm make?

c) What price setting rule does the perfectly competitive market obey in the long run? What will the price be in the market in long run equilibrium? How much happy bread will each firm make? How much profit will it make?

2. Oligopoly game wrap-up. Each student has been assigned to a duopoly market, chosen a quantity to produce or price, and, by now, learned of the choice of the other firm in the market. On a sheet of paper,

identify the market you were assigned to, your name and your partner's name, and your and your partner's price/quantity choices. Based on the "rules of the game," outlined on the original game sheet, determine your profit and your partner's profit. Then conduct a brief assessment–in retrospect, would you have changed your choice? If so, how? Why? The assessment should not be purely subjective, but should include a demonstration/calculation designed to support your position. In class, we will examine everyone's choices, compare prices, quantities, and profits in the different markets, and learn the "mathematically correct" solutions.

Homework Packet 8, ECON 5313, Darren Grant, Summer 2002.

Special July 4 Holiday Version!!

Book Reading: Read Chapter 14 for next week. We will spend the week on it.

Articles: I have given you two newspaper articles that don't relate to next week's material. They are, however, excellent and timely illustrations of some of the fundamental concepts we have recently covered.

Practice Problems:

1. Work these problems in your book that pertain to our discussion of incentive conflicts: 2-4, 5-12, 15-10.

2. Work these problems in your book that pertain to our discussion of organizational architecture: 11-4, 11-5, 11-11.

Homework Problems: None! That's what makes this homework a special July 4 Holiday version!

Homework Packet 9, ECON 5313, Darren Grant, Summer 2002.

Book Reading: We are discussing Chapter 14 this week and next.

Article: The article I gave you last week, "Old Hands Hold Tight to Know-How," will also be useful for next class. Read it over again before class.

Practice Problems:

1. Some jobs you work on Sundays, some jobs you don't.

a) Working on Sundays could be a good thing ("I get to work this Sunday") or a bad thing ("I have to work this Sunday"). How could you look at market wages and determine which was the prevailing sentiment among workers?

Let us presume that workers generally prefer not to have to work on Sundays.

b) Illustrate the wages that will be paid in jobs where you do have to work on Sunday, and in jobs where you do not have to work on Sunday, on a pair of supply/demand graphs. What determines the magnitude of the compensating wage differential?

c) Years ago it was not uncommon to have "Blue Laws" that prohibited work on Sunday. If Blue Laws were to be enacted that eliminated Sunday work, how would employment be affected in the short run and the long run? In answering the question, think about the law of diminishing returns, the scale effect, and the substitution effect.

Homework Problems:

1. Work problem 14-12 in your book.

2. Work problem 14-25 in your book.

3. Catholic priests, nuns, and brothers take a vow of chastity, which means that you give up marriage and intimate non-marital relationships. This is one of three vows, none of which are optional.

a) How does the vow of chastity affect the labor supply of Catholic priests?

b) Priests (and nuns and brothers) also take a vow of penury, which essentially means that they will earn no more than their sustenance from their work. It's like saying you will only receive a small hourly wage. How does this affect the labor supply of priests?

c) On a labor supply graph, the effect of the vow of penury is not the same as the effect of the vow of chastity. Explain why.

d) A friend says, "The vow of penury isn't going to affect the number of people that become priests, because you are either destined to become a priest or not, and nothing is going to stop you." In economic terms, what is my friend saying about labor supply? Illustrate this concept on a graph.

e) Protestant ministers typically take neither vow; many are married, and their wages are determined by a fairly competitive market. Which labor market is more likely to have difficulty

filling all the available positions–the market for Catholic priests, or the market for Protestant ministers? Why?

Homework Packet 10, ECON 5313, Darren Grant, Summer 2002.

Book Reading: The discussion of incentive pay is in Chapter 15. However, we will talk about how incentive pay should be viewed as a "system" that also includes the assignment of decision rights and a method of evaluating performance. Chapter 12 discusses decision rights and Chapter 16 discusses evaluation. Read all three chapters.

Articles: Read the article about Global Dining for next class.

Practice Problems:

1. Advertisements for the Army try to attract recruits by telling them how many skills they'll be able to use when they *leave*, four years later. How could it be cost-effective for the Army to recruit soldiers who've been *encouraged* to go elsewhere when their tour of duty is finished? What is it about the Army that gives it comparative advantage in jobs that most people will leave after a relatively short time? From a value added perspective, the total benefits (firm + worker) to spending a few years in the Army then moving on must exceed the total costs of an alternative. Describe how.

Homework Problems:

1. Prior to *Flood v. Major League Baseball*, major league players did not have "free agency". That is, they could bargain only with the team that drafted them, and could change teams only if they were traded. If they didn't like the salary their team offered them, they could refuse to play baseball, but they couldn't voluntarily sign with another team. Salaries have risen considerably since the advent of free agency. Read *Ball Four* for a nice illustration of life prior to free agency.

a) Even before free agency, better players received higher salaries than mediocre players. Why should teams do this?

b) In some jobs, such as many manufacturing jobs, the worker often stays with his/her employer for a very long period of time. In other kinds of jobs, such as disc jockey, baseball player, or waitress, workers exercise their "free agency" and change jobs quite frequently. What primary characteristic separates the former from the latter? Explain how it affects the frequency of job change.

c) In professional sports, concrete measures of performance (batting averages, ERA's, etc.) are easily available. Yet pay is rarely closely tied to particular measures of performance. What might be some problems with doing so? Compare the severity of these problems in professional baseball, golf, football, and basketball. In which sport would you expect the largest fraction of pay to be based on bonuses?

d) Which system put players where they were most "needed": free agency, or no free-agency? Why?

2. Many firms that have recently suffered reduced demand for labor have laid their workers off. Still others, however, have offered generous early retirement packages to many of their senior workers in order to reduce the workforce.

a) Why might these firms offer retirement packages, instead of simply laying off the workers?

b) Why encourage senior workers to leave their jobs, instead of those with less seniority? In general, the least and most senior workers seem to suffer the worst impact of downsizing. What's so special about those workers in between?

Homework Packet 11, ECON 5313, Darren Grant, Summer 2002. This is your last packet.

Book Reading: No book reading for next class. For the Monday following, however, read Chapters 16 and 17.

Articles: You have been given two articles: "Network of Doctors, Touted as a Panacea, Develops Big Problems," from 1996, and "Physician Practice Turnaround in an Integrated Delivery System," from this spring. Both articles are about physician practices, but one is about a success story, the other about a failure, I would like to explore why. You might want to think about the following points when reading the articles.

a) What are the key elements of the organizational architecture in each system? Do the different components of organizational architecture work well together?

b) Why the organizational architecture was more successful at Advocate than at Coastal?

c) A primary motivation of Coastal's approach had to do with bargaining power. But this is not the only way to motivate or evaluate a business strategy. Assess the wisdom of Coastal's approach from a value-added perspective. Think about the ways that Coastal's approach creates value and destroys value, and think about the ways that Advocate's approach does the same. Does the more successful organizational architecture create more value than the alternative architecture does?

Practice Problems:

1. At most country fairs, you pay for the rides with tickets, and for the dart/water pistol/guess-my-weight games with cash. Why? Who gets paid more, the ride operators or the game hucksters? Why?

Homework Problems:

1. Work problem 15-21 in your book.

2. In the mid-1800's, whale oil was very valuable, and whales were hunted far and wide by whaling ships, as in *Moby Dick*. Sailors were paid with a fraction of the total value of the haul at the end of the voyage. The higher the rank, the higher the fraction. The captain of the ship often owns part of the vessel, in addition.

a) What considerations would lead to this pay scheme; that is, why is this the optimal way to pay your sailors?

b) What is the optimal pattern of ownership of whaling vessels? Should a whaling firm own all of many vessels, part of many vessels, or just one vessel? Should the captain own part of the vessel?

c) What is the opening sentence of *Moby Dick*?

Special Nifty Thing To Do, ECON 5313, Darren Grant, Summer 2002.

On the back of this handout you will find the Arlington ISD Salary Schedule for the last school year. (Next year's salary schedule has not been posted.) Review the salary schedule and comment on the following questions, which ask you to examine how the salary schedule compares with the key labor market concepts we have discussed in class. Type up your comments and hand them in next class; also keep a copy for yourself as we will talk about this assignment in class.

In your discussion, remember that the AISD is a public entity—it does not make a profit, and does not face much competition from private schools in the area, simply because there aren't that many of them, compared to the size of the AISD. That is, the AISD has a near monopoly in education in Arlington. Thus, you need not assume that the AISD will behave in the way we expect competitive, profit seeking businesses to behave. The main features of the AISD salary schedule, however, are typical for a public school district, though of course the salaries differ between districts.

1. Are compensating wage differentials a prominent feature of the AISD salary schedule? Why or why not? What human resource management problems (recruitment, retention, etc.) do occur or would occur in the absence of compensating wage differentials?

2. Is the on-the-job training gained as a teacher general skills or specific skills? Examine the way in which wages relate to experience. In what ways does the wage/experience relationship conform to the theory of on-the-job training, and in what ways does it differ from theory? Would the AISD be better off if their wage/experience relationship fully conformed to theory? If so, how?

3. How do wages respond to schooling in the AISD salary schedule? In what ways does this conform to the theory of schooling, and in what ways is it different?

4. What form of incentive pay is offered in the AISD salary schedule? What are some positive and negative features of this feature of the salary schedule?

5. If you were going to change the AISD salary schedule, how would you do so, and why? Describe the benefits you expect to achieve by your changes, and some of the potential down-sides of your changes.

Oligopoly Pricing Game, Darren Grant, ECON 5313, Summer 2002.

You are a competitor in a duopoly with one other firm that is equal to you in capabilities, costs, etc. Overall product demand is given by the equation $Q = 100 - P$. The marginal cost of producing the product is $10, though in some cases capacity must have been previously installed. The rules of the game depend on which market type you are in. This will be assigned to you in class.

Your market type is: _____.

- *Cournot.* You and another player simultaneously and anonymously determine the amount that you wish to produce. Then your and your rivals' choices are revealed, market price is set according to the total quantity produced and the demand curve above, and all units are sold at the market price.

- *Bertrand*. You and another player simultaneously choose the price you will charge (to the dollar). You can instanteously meet all demand at the price at the marginal cost of $10 per unit, you do not need to build capacity in advance. Then your and your rivals' choices are revealed, and the firm with the lower price gets all the sales, unless the prices are equal, in which case you will share sales.

- *Price Leader*. You get to choose your capacity. This capacity is then revealed to your rival, who then chooses his capacity. Then market price is set according to the total quantity produced and the demand curve above, and all units are sold at the market price.

- *Price Follower*. After seeing the price leader's capacity, you choose your capacity. Then market price is set according to the total quantity produced and the demand curve above, and all units are sold at the market price.

- *Cartel*. You and your rival get to work out together the price you will charge and the amount each firm will produce. The price and total quantity produced must satisfy the demand curve above.