Review Questions for Test Two:

Chapter Seven:
1. Define and then derive the expression for the marginal rate of technical substitution (MRTS).
2. Suppose an isoquant is a straight line with a slope of -1. What does this imply concerning the marginal rate of technical substitution? What does it imply concerning the marginal products of the two inputs?
3. The marginal product of labor must fall over time because the labor force is increasing. Do you agree or disagree? Why?
4. Explain how the marginal product and average product can be derived from the total product curve.

Chapter Eight:
1. A) Consider a firm which produces baseball bats using wood and workers. On a graph with capital (wood) on the vertical axis and labor (workers) on the horizontal axis, draw an isoquant line such that the firm is minimizing the total cost of producing Q₁ baseball bats. Let this initial point be profit-maximizing.
   B) Suppose forest fires cause the price of wood to rise. Trace the effects of this change on the firm’s optimal combination of inputs. Will they now produce more or less than Q₁ bats? Why?
2. “An expansion path that is a straight line through the origin implies constant returns to scale.” Evaluate this statement.
3. Illustrate graphically how a long-run average cost curve is derived and explain why it is A) an increasing cost industry, B) a decreasing cost industry, or C) a constant cost industry.

Chapter Nine:
1. A) Jack’s lawn-mowing service is a profit-maximizing, perfectly competitive firm. Jack mows lawns for $27 each. His total cost each day is $280, of which $30 is total fixed cost. He mows 10 lawns a day. Will Jack exit the industry in the short-run? Why or why not?
   B) Will Jack exit the industry in the long-run? Why or why not?
2. Why will a firm continue to operate in the long-run earning zero economic profits?
3. Assume a new innovation is developed that reduces the costs of production for firms. What would be the effects on a competitive industry?

Chapter Ten:
1. Suppose the following supply and demand curves govern the market for lungs: \( Q_S = 4,000 + P \) and \( Q_D = 10,000 - 2P \).
   A) Assume that individuals are allowed to sell their lungs. Graph the supply and demand curves and calculate the equilibrium price and quantity. Identify graphically and calculate total surplus.
   B) What is the numerical change in consumer surplus in going from a situation in which the sale of lungs is permitted to one in which it is prohibited? Is there a gain or loss in consumer surplus?
C) What is the numerical change in producer surplus in going from a situation in which the sale of lungs is permitted to one in which it is prohibited? Is there a gain or loss in consumer surplus?
D) What is the numerical deadweight loss created by prohibiting the sale of lungs?

2. Explain why elasticities are relevant in determining the effects of an excise tax.

Chapter Eleven:
1. Explain why the marginal revenue curve lies below the demand curve.
2. “The more narrowly a market is defined, the more likely a firm will be considered a monopoly.” Do you agree or disagree? Why?
3. “Demand is infinitely elastic in perfect competition, so the more elastic the demand the more the firm is like a competitive firm. Therefore, if a firm has an elastic demand, it is not a monopoly.” Do you agree or disagree? Why?
4. Will perfect competition always result in more output and lower price than monopoly? Explain.

Chapter Twelve:
1. What is peak-load pricing and why is it advantageous compared to charging a single price?
2. Indicate whether the items below are examples of price discrimination and briefly state your reasons:
   A) A movie theater charges a lower price to children than adults.
   B) Airlines charge lower prices for children than adults.
   C) A telephone company charges lower prices for long-distance calls made in the evening.
   D) The postal service charges the same price for all first class mail.
   E) The American Economic Association charges high dues to full professors than to assistant professors.
3. Since first degree price discrimination offers a firm the largest profits possible, why don’t firms engage in the pricing practice more often?
4. What is intertemporal price discrimination and how does it work? How is the resale problem solved?

Chapter Thirteen:
1. What are the similarities and differences between perfect competition and monopolistic competition? Monopoly and monopolistic competition?
2. What is excess capacity and how is it related to the model of monopolistic competition?
3. In the dominant firm model, what happens if the supply curve of the smaller fringe firms becomes more elastic?
4. Explain how cartel theory and oligopoly are related. Does this imply that most firms in oligopolies are colluding? Why or why not?
5. What is a cartel and why are they had to maintain successfully?
If we can get to it before 4/17/09, these questions will help you prepare for the concepts covered in Chapter 14. Otherwise, this material will be included on the next exam instead.

Chapter Fourteen:
1. Mia has been awarded a penalty kick in her soccer game. China’s goalie has two possible strategies, to dive left or dive right. Mia can shoot left or right. There is no time for the goalie to determine where the ball is going before she must commit herself to diving left or right. Suppose that the goalie always stops the shot if both players choose right, and that Mia always score if she shoots right uncontested. Mia is not as adept at shooting to the left. When Mia kicks left, the goalie stops the shot 75% of the time if she dives left, and Mia misses the open goal half the time when shoot left uncontested.

   A) Summarize this game in a payoff matrix.
   B) Does either player have a dominant strategy? Explain.
   C) What is the Nash equilibrium? Explain.

2. Define adverse selection and moral hazard. Give examples of each.

3. How do single-period games differ from repeated games? Why does this difference lead to different expectations about the likelihood of cartels being successful? Why can’t game theory be used to state with certainty whether a particular cartel will be successful or not?

4. Suppose there are 1000 used cars in a market, with 600 being poor quality and 400 high quality. The high quality cars are worth $10,000 and the low quality cares are worth $5,000.

   A) If buyers can tell by observation whether a car is high quality or low quality, what will be the market equilibrium?
   B) If neither buyers nor sellers know the quality of a car, what will be the market price for cars?
   C) If asymmetric information applies, what will happen?

5. Explain the difference between adverse selection and moral hazard. How is asymmetric information inherent in both?