This review sheet is intended to cover everything that could be on the exam. However, it is possible that I may have inadvertently overlooked something. You are still responsible for everything in the chapters covered except anything that I explicitly say you are not responsible for. Therefore, if I left something off of this sheet, it can still be on the exam. There will be no multiple-choice questions. Most of the questions will be like the ones on the homework assignments, and possibly a few definition questions. I am more likely to ask questions that make you use definitions rather than have you recite them. I will probably ask one of the questions from the book at the end of the chapters.
    The review session for this test will at a time and date (probably be Thursday, 4/10) the class will determine.
        Also note that the material for Chapter 8 was on Test #4 last year because their exam was earlier.

Chapter starting at 6.5: Understand what isoquants and isocost lines are. We will ignore the area where the isoquants slope upwards because it is outside of the feasible area. They act very similarly to indifference curves and budget constraints. **I will not ask about the slope of the isoquant because that was on the previous exam.** Do not worry about isoquants for perfect substitutes and for perfect complements. Know what moves the isocost lines and be able to show those movements. Their slope is -w/r. Know how to find the expansion path. What is the equi-marginal principle as it applies to inputs in production. Know how to determine if there are increasing (IRTS), decreasing (DRTS), or constant returns to scale (CTRS). Ignore sections 6-7 through 6-9.

Chapter 7: What are implicit and explicit costs? How do economic costs differ from accounting costs? What is the difference between short-run and long-run? Be able to plot the SRTC, SRTVC, SRATC, SRAVC, and SRMC curves. Derive them from the isoquant/isocost diagram by holding K constant and drawing a horizontal line at that level. **Hints on drawing them: Note that the SRMC curve must go through the minima of both the SRATC and the SRAVC curves, so draw the SRMC curve last. The distance between the SRATC and SRAVC curves is SRAFC, so those two curves must be getting closer together. Therefore, draw the SRAVC curve first, then the SRATC curve and finally the SRMC curve. Remember to start the SRMC curve at the same point as the SRAVC curve.** Also, be able to derive the LRATC, LRTC, and LRMC curves from the isoquant/isocost diagram using the expansion path. Understand why the LRATC curve is the envelope of the SRATC curves. Be able to draw them. Understand why the LRTC curve is the envelope of the SRTC curves. Be able to draw them. **Only** worry about the **first** diagram of the three different LRATC curves on page 295 in Figure 7-6. What is the learning curve? Why does it take that shape? How can we keep costs down by outsourcing and having immigration of labor? Skip sections 7-6 to 7-7. Understand breakeven analysis including the graph of straight-line TC and straight-line TR. How does the operating leverage affect the diagram? What is DOL? How do we calculate it? What does high DOL imply about the firm's profitability? Why is it acceptable to use the SRTC curve that is straight? Ignore pages 313 - 316.

Chapter 8.1 - 8.2: What are the characteristics of perfect competition, monopoly, monopolistic competition, and oligopoly? **Why do all of these firms set MR = MC?** What is meant by imperfect competition? Be able to relate the industry supply and demand for a perfectly competitive industry to the demand for the firm. Why does D = MR for that firm? Be able to find the output, price, total costs, total revenue, total profits or losses, and total variable costs from the ATC/AVC/MC/D/MR diagram. Hint: Find the ATC at the quantity produced **not** at the minimum of ATC. Be able show on both the firm and industry diagrams what happens if the profits are not zero. Even though we imply the industry supply curve is horizontal in the long-run, it can be upward sloping or downward.

Non-graded Assignment #6A to be reviewed with Assignment #6.

1) (25 points) Suppose a firm's selling price is $10/Q, its AVC is $6/Q, and its total fixed costs are $1000. Draw its straight line TR/TC diagram to calculate the break-even point. If the company is selling 300 items, then calculate its DOL. Show all work and briefly explain what you did to get the graph, break-even point, and the DOL.

2) (25 points) Suppose two firms have the same sales and same profits, but one has higher fixed costs. Which one has a higher DOL? How can you tell? Why is that bad?

3) (40 points) Draw the ATC/AVC/MC diagram for a perfectly competitive firm who is making money. Beside it draw the industry supply and demand diagram. Illustrate what will happen over time. Explain why the curve(s) moved as drawn.

4) (10 points) Why do all profit maximizing firms set MR = MC? Why is MR = P for perfectly competitive firms?