This review sheet is intended to cover everything that could be on the exam; however, it is possible that I will have accidentally left something off. 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 in the homework assignments, and possibly a few definition questions, but I am more likely to ask questions that make you use the definitions rather than recite them. I will probably ask one of the questions from the book at the end of the chapters.
The review session will be TBA, probably 5/4.

Chapter 24 starting Page 544:   What is meant by **perfect price discrimination**? (In other courses you may find out about other types of price discrimination.) What are the advantages and disadvantages of that type of firm? Where do they produce? Be able to prove that monopolies do not produce the socially optimal quantity unless they are perfect price discriminating monopolists.

Chapter 25: What is a **monopolistically competitive industry**? What is **product differentiation**? Why do they advertise? How does the D/ATC/MC diagram look for a firm making short-run profits, making short-run losses, and in the **long-run equilibrium**? *Hint for the long-run graph. Draw the D and MR first. Then draw the ATC tangent to the demand. Draw the MC go through the MR directly below the tangency point and through the minimum of the ATC. Remember, the minimum of the ATC cannot be at the tangency point.* Illustrate the movements of the graphs from the short-run profits or losses to the long-run. Why does the slope of the firm's demand change as other firms enter or exit? Why is the change in slope virtually undetectable? Understand the advantages and disadvantages of **direct marketing, mass marketing,** and **interactive marketing**? What are the differences between **informational advertising** and **persuasive advertising**? What are the qualities of **search goods, experience goods,** and **credence goods**? Ignore the pages on "information products".

Chapter 26: What is an **oligopoly**? Why does it need barriers to entry? How do we use **CR4** and **HHI** to measure how concentrated an industry is? (I won't ask you how to spell Herfindahl-Hirschman Index). Why is it difficult to figure out which firms should be counted and which should not be? Why does the Department of Justice guidelines on mergers use HHI rather than CR4? *(A change of less than 100, allow. If the post merger HHI is <1500 allow. If 1500 < HHI <2500 look if the change is over 100. If HHI> 2500 look if the change is between 100 and 200, disallow if the change is over 200.)* Source: https://www.justice.gov/atr/horizontal-merger-guidelines-08192010 For game theory, understand what is meant by **zero-sum game, negative-sum game,** and **positive-sum game**? Be able to use a **payoff matrix** to find the **Nash Equilibrium(-ia), cooperative outcome**, and **dominant strategies** (if they exist). Understand the problems caused by the **prisoner's dilemma**. *Hint on the equilibria. Always list the equilibrium as (player 1's strategy, player 2's strategy). The payoffs are not the equilibrium.* What is a **cartel**? Why are they easier to enforce if there are a small number of firms, make relatively similar products, have easily observable prices, and the prices do not change much? Ignore network effects.
This is the non-graded Assignment #9A that will be reviewed with Assignment #9.

1) (10 points) Would having similar products help the industry to keep a cartel or would it be more likely to break up a cartel? Explain your logic.

2) (30 points) Suppose the sales of 9 firms were $100, $100, $100, $100, $200, $200, $200, $200, and $800. Calculate CR4, CR8, CR10, and HHI. Show all work. If two of the firms with sales fo $200 wanted to merge, would the DOJ allow it? Explain your logic.

3) (20 points) Find the Nash equilibrium, cooperative equilibrium, and dominant strategies if they exist.. Explain how you found them.

		Less Than Jake	
		High Price	Low Price
Dropkick Murphys	High Price	11 15	12 9
	Low Price	7 16	6 13

4) (20 points) Explain why it is hard to determine CR4 and HHI? Question #2 above makes it look easy. Give two examples which prove your points.

5) (20 points) What is the prisoners' dilemma? Explain why the prisoners are likely to confess. You do not need to create the payoff matrix.

Review sheet for the Final.

My finals are comprehensive. I try to evenly cover the material from the four tests plus material from after the fourth exam. I will put on the important topics and I will have a few questions on topics I had wanted to ask, but I did not have enough time on the tests to ask about. The review session will be at a time chosen by the students. The time for the exam is set for Monday 5/15 at 3:00 for section #1 and Tuesday 5/16 at 10:00 for section #2.   You can take it with either section. However, you must tell me in advance so I can print the correct number of exams.

Material from after Exam #4.

Chapter 28:What is meant by **MRPL**? Why is it = **MPL*MR** (sometimes called MPPL*MR). Why is that usually **MP*P** for perfectly competitive firms? What is **MFC**? Why is the firm's **demand for labor** the same as MRPL? Note the vertical axis should be $/L or wage. Be able to derive the **market demand for labor**. *It is **NOT** basically the same derivation as the perfectly competitive industry's supply curve. When W changes, output changes which changes the price and moves the firms' labor demand curve.* What determines the labor supply? What moves labor demand and labor supply? Ignore outsourcing. Why do monopolists hire fewer workers? Why should $MPL/w = MPK/r = MP_{land}/P_{land}$ where w is the wage rate and r is the rental rate?

Questions based upon the material after Exam #4.

1) (20 points each) Illustrate each of the following events on the supply and demand for labor of college professors. Explain why the curve(s) moved as drawn.
A) The demand for a college education increases.
B) More people get a Ph.D.

2) (10 points) Why should $MPL/w = MPK/r$?

3) (10 points) What is MFC? Why should it equal MRPL?

4) (10 points) The diagram for the monopolist's demand and supply in the labor market has a labeling error. What is it? Explain how you know what it should be.

5) (30 points) Draw the perfectly competitive firm's labor supply/labor demand diagram and beside it, the industry labor supply/labor demand diagram. Explain how the two graphs depend upon each other.