

Review Sheet
Econ 200 Dr. Schwab
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As always, you ought to know the definitions of all the terms that appear in the chapter summaries in Dr. Schwab's PowerPoint slides. Those are undoubtedly the most important topics. Also remember that this is a CUMULATIVE test, so stuff from the beginning of the class is fair game. The new material after midterm 2 will only be about 80% of the test.

Chapter 14: Firms in Competitive Markets

Make sure you know what conditions exist in a perfectly competitive market: many firms, price taking, and the profit maximization rule of $P = MC$. The important point about a competitive market is that any individual firm or buyer has no control over price and has no effect on the overall market demand. This is the same thing as saying that each firm faces a flat (perfectly elastic) demand curve.

An important distinction to make is between the short run and the long run. One way to think about this is that in the short run some costs can be fixed costs, but in the long run all costs are variable costs. A firm shuts down in the short run if it cannot cover its variable costs with the revenue it makes - fixed costs are irrelevant to the shutdown decision. Make sure that whenever you are asked to find the profit maximizing level of output to check if the firm in fact continues to operate. Make sure the firm doesn't want to shut down!

Remember that in the long run, not only can firms vary their plant size and other fixed inputs, but also that new firms can enter and exit. In the long run, nobody makes any economic profit because new firms will continue to enter and compete away the bonus. You should be able to understand the diagram in the last page of PowerPoint slides that shows the effects of a demand increase (or decrease) in the market in both long and short run. You should understand where on the diagram the profits are represented and how the entry of new firms eliminates that profit. In the long run, firms produce at the minimum of the ATC curve, and that's where MC will intersect the ATC curve if it ever does.

Finally, make absolutely sure you know how to fill in a table to get things like MR, MC, TR, profit, etc. If you can't figure out what MC is, then there's no way you'll be able to figure out what Q satisfies $P = MC$! PS5 problem 1 is a good example of what you ought to be able to do.

Chapter 15: Monopoly

In the case of monopoly, firms can influence the price of the good and can make economic profits even in the long run. Remember that the thing driving economic profit to zero was entry - but in the case of monopoly, nobody can enter for some reason or other. You need to understand all the conditions that must hold for a firm to be a monopolist, including no availabilities of close substitutes and being the sole seller. One fact of all monopolies is that they will always face downward sloping demand curves if demand obeys the law of demand. Why is this true? Because the monopolist owns the entire market - it faces the actual market demand curve, and with a law of demand good, the demand is downward sloping.

Also, monopolists are special because they have a different profit maximizing rule. Instead of $P = MC$, the monopolist will do $MR = MC$. This happens because the monopolist can actually affect the price he gets for the good. Note that monopolists will often underproduce to jack up the price. What's the difference between the profit maximizing rule for perfectly competitive firms and for monopolists? A competitive firm is a price taker and $P = MR$ at all levels of output. A monopolist can affect his price, so it will not be true that $P = MR$ at all levels of output. In fact, P will almost always be greater than MR. That's why we say the monopolist does $MR = MC$. Is a perfectly competitive firm doing $MR = MC$? Yes, but competitive firms are the special case where $P = MR = MC$, so we just say $P = MC$. They're doing the same thing except monopolists control price while competitive firms do not.

You should be able to figure out on a diagram what quantity and price the monopolist picks. PS5 number 3 is exactly this. Also, you should be able to figure out what the deadweight loss to society from a monopolist's underprovision (yes, it is almost always going to be underprovision) of goods is. You should also be able to figure out what the consumer surplus is under a monopoly equilibrium. If you don't know how to do this, ask!

One last thing to make sure you understand is the way a firm can use tying/bundling and two part tariffs to take all the surplus away from consumers. You should be able to do simple examples like PS5 problem 4 or the PowerPoint overheads for bundling. In a two part tariff, the firm will make the total social surplus maximizing quantity (the competitive efficient quantity), but then will charge the consumers their entire consumer surplus as the lump sum part of the two part tariff. That is how a firm using a two part tariff can take all of the surplus.

Chapter 16: Oligopoly and Game Theory

We really didn't go over Oligopoly, so you really should just know what an oligopoly is. This chapter is mostly about Game Theory. The things you want to be able to do are set up and solve the two types of games introduced in the class.

First, look at whether this is simultaneous move or sequential move game. If it is a simultaneous move game, you know you want to set it up as a payoff matrix. If it is a sequential move game, you want to set up a tree. Now identify who the players are and what payoffs they will get. Make sure you know where to put these things, especially in a sequential game where it matters who you place as the first decision maker and who you place as the second decision maker.

When solving a payoff matrix, do the underlining of the best choices for each player given their opponent's pick. If you don't know how to do this, or why you are doing this, ask. After underlining, look for dominant strategies. If everyone has a dominant strategy, then you should be able to find a dominant strategy equilibrium. If at least one guy doesn't have a dominant strategy, move on and identify Nash Equilibria. Any cell with everything underlined will be Nash.

When solving a tree, use backwards induction. Start at the end of the game and figure out what the second mover will do in each branch of the tree. The first mover will only ever consider the outcomes that the second mover would pick. Compare those two for the first mover and you have your Nash equilibrium.

You should be able to go from a description with payoffs, players, and strategies, to setting up the model and solving for equilibrium solutions. Remember: a Dominant Strategy Equilibrium or a Nash Equilibrium is the list of strategies that each player picks - it is NOT the payoffs that result from them! If we ask you for the equilibrium, give us the strategies that are picked. If we ask you for the outcome that actually occurs, then tell us what the payoffs are from those equilibrium strategies.

Lastly, make sure you know what a credible threat is and when a threat is not credible.

Information and Uncertainty

One key thing you want to be able to distinguish is the difference between Adverse Selection and Moral Hazard. Both of these are about some private, hidden information. Adverse Selection is the problem of hidden characteristics or traits while Moral Hazard is about hidden behavior or actions.

You should know how to calculate the expected value of a gamble. Anytime the outcome is uncertain, you have a gamble with a bunch of events that have various probabilities. To find expected value, line up all the possible outcomes of the gamble and then put the probability of each event happening next to it. Multiply each outcome by the probability that particular outcome will happen. Add the products up and you have expected value.

What's the difference between a risk neutral and a risk averse person? The risk neutral person only cares about expected value - if you offer him two gambles with the same expected value, he doesn't care which one he gets. The risk neutral person will care about which gamble he gets though. If two gambles have the same expected value, the risk neutral person wants the gamble with less probability on extreme outcomes and high probability on the steady outcome in the middle near the expected value. How does a risk averse person get this?

Through diversification - remember the example from lecture about spreading risk across many different investments. The more gambles you make, the lower the probability that all of them will fail. A risk averse person really wants to avoid this total failure, so diversifying to lots of smaller gambles is a safer, less risky bet. This is exactly what the eggs problem from PS6 was about. In fact, the best gambles to diversify on are negatively correlated ones. This is a fancy way of saying you want to diversify among gambles that don't all win at the same time. This is exactly what the Ice Cream and tickets problem in PS6 was about. Make sure you can do problems that look like the Eggs or Ice Cream problems.

One last thing - you *do* need to know how to figure out the probability that two independent events occur. All you have to do is multiply the two probabilities together.

Labor Markets and Earnings Discrimination

Be able to figure out what the marginal product of an input is, and then figure out the value of the marginal product of that input. You need to be able to complete tables like the one in PS6. Know that the firm will profit maximize by picking the Q where wage = VMPL. By completing and looking at a table, you should be able to tell if there is diminishing marginal product or not instantly.

