Practice Midterm #2 Name:___________________________________

Microeconomics - EC 2106

Instructor: Robert McNab Score:_______________

INSTRUCTIONS: Please answer all questions to the best of your ability within the allotted time of 100 minutes. You are required to **show your work** to receive credit. For multiple choice and true/false questions, please circle the appropriate answer. 100 possible points.

Section 1: Basic Comprehension 20 points

1. Indicate whether the following statements represent a normative (N) or positive (P) statement. Two points apiece.

P N Monopolistic firms charge higher prices that competitive firms.

P N Increasing the minimum wage is leads to increases in unemployment for lower-skilled workers and thus is an unjust policy option.

2. T F If the marginal cost curve for a purely competitive firm lies below the average cost curve, then average costs must be declining. 3 points.

3. T F Price elastic goods are less responsive to changes in price than price inelastic goods. 3 points

4. Which of the following statements is most accurate? 5 points

a. All else remaining equal, if supply increases and demand decreases, price will decline and quantity will increase.
b. All else remaining equal, if supply decreases and demand increases, price will increase and quantity will decrease.
c. All else remaining equal, if supply increases and demand increases, price will be ambiguous and quantity will decrease.
d. All else remaining equal, if supply decreases and demand decreases, price will be ambiguous and quantity will decrease.

5. Assume that a purely competitive firm is operating in long-run equilibrium and demand increases by 20%. In the short-run, the firm will: 5 points

a. Be profitable
b. Break Even
c. Minimize Losses
d. Shutdown

Section 2:

1. Assume that Microsoft is a monopolistic firm with respect to the personal computer operating system market and that the marginal cost for the last unit sold is $25. The short-run equilibrium quantity is 35 million units per quarter at a price of $98 per unit. Assume that Microsoft is profitable, such that the ATC of the last unit is $55 and the AVC of the last unit is $35.

   1.1 Illustrate the short-run equilibrium described in (1). 5 points.

   1.2 Assume that due to a computer virus, 50% of the new copies of Windows 2000 are unusable, and as a result, market demand declines by 45%. Illustrate what might occur to the short-run position of Microsoft in the operating system market. 10 points.

2. Assume that the market for computer flight simulation games is in equilibrium at a price of $45 with a equilibrium quantity of 1,925,000 units sold per month. Your research staff has informed you that the price elasticity for your flight simulation game is estimated at 3.2 while the income elasticity is estimated at 1.25 Furthermore, they have estimated that the cross-price elasticity between your computer software game and joysticks is -2.5. Answer the following questions based on this information. 10 points

   3.1 Assuming all else remaining equal, should you lower the price of your flight simulation game from $45 to $40? Provide a numerical illustration for your answer. 3 points

   3.2 Your sources in Washington D.C. have informed you that personal income is expected to increase by 5% in the coming year. Assuming all else remaining equal, what action should you take based on this information? 3 points

3.3 You receive information that the main producer of joysticks has granted a 30% wage increase to their employees and that the price of joysticks is expected to increase by 10%. All else remaining equal, what impact can you expect this to have on the demand for your product? 4 points.

4. Illustrate the short-run profitable equilibrium for a purely competitive firm, a monopolistic firm, an oligopolistic firm, and a monopolistic competitor. 15 points.

5. In your own words, describe the differences between a purely competitive firm and a monpolistic firm. 10 points

6. In your own words, illustrate and explain the concept of price discrimination. 15 points.

7. In your own words, describe the relationship between normal goods, income, and income elasticity of demand. 15 points

<u>Section 1:</u> Basic Comprehension 20 points

1. Indicate whether the following statements represent a normative (N) or positive (P) statement. Two points apiece.

   P Monopolistic firms charge higher prices that competitive firms.

   N Increasing the minimum wage is leads to increases in unemployment for lower-skilled workers and thus is an unjust policy option.

2. **True** If the marginal cost curve for a purely competitive firm lies below the average cost curve, then average costs must be declining. 3 points.

3. **False** Price elastic goods are less responsive to changes in price than price inelastic goods. 3 points

4. Which of the following statements is most accurate? 5 points

All else remaining equal, if supply decreases and demand decreases, price will be ambiguous and quantity will decrease.

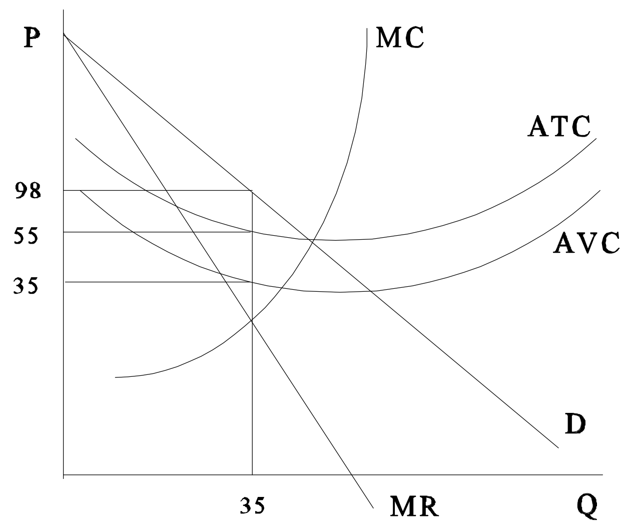
5. Assume that a purely competitive firm is operating in long-run equilibrium and demand increases by 20%. In the short-run, the firm will: 5 points

   Be profitable

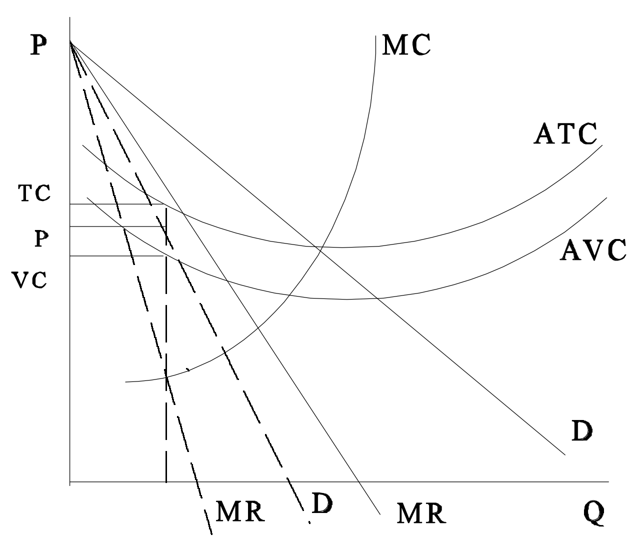
Section 2:

1. Assume that Microsoft is a monopolistic firm with respect to the personal computer operating system market and that the marginal cost for the last unit sold is $25. The short-run equilibrium quantity is 35 million units per quarter at a price of $98 per unit. Assume that Microsoft is profitable, such that the ATC of the last unit is $55 and the AVC of the last unit is $35.

   1.1 Illustrate the short-run equilibrium described in (1). 5 points.



1.2 Assume that due to a computer virus, 50% of the new copies of Windows 2000 are unusable, and as a result, market demand declines by 45%. Illustrate what might occur to the short-run position of Microsoft in the operating system market if Microsoft moves from short-run profitability to short-run minimizing losses. 10 points.



2. Assume that the market for computer flight simulation games is in equilibrium at a price of $45 with a equilibrium quantity of 1,925,000 units sold per month. Your research staff has informed you that the price elasticity for your flight simulation game is estimated at 3.2 while the income elasticity is estimated at 1.25 Furthermore, they have estimated that the cross-price elasticity between your computer software game and joysticks is -2.5. Answer the following questions based on this information. 10 points

3.1 Assuming all else remaining equal, should you lower the price of your flight simulation game from $45 to $40? Provide a numerical illustration for your answer. 3 points

Yes, lowering the price from $45 to $40 would induce a greater increase in quantity demanded relative to the percentage decline in price, thus leading to increases in total revenue. Since the student has been given Ed, they should be able to determine the new quantity demanded and illustrate that if Ed > 1 than if Price declines, quantity demanded increases and total revenue increases.

The percentage change in price is = - 11.11% (40-45)/45
Ed = 3.2
*The resulting percentage change in quantity demanded is = 35% (11.11%*3.2)*
The new quantity demanded is = 2,598,750

Old total revenue =$86625000, New Total Revenue = $103950000

3.2 Your sources in Washington D.C. have informed you that personal income is expected to increase by 5% in the coming year. Assuming all else remaining equal, what action should you take based on this information? 3 points

*If personal income increases by 5%, then we can expected the quantity demanded for our product to increase by 6.25% (5%*Ey) = (5%*1.25).*

Based on this information, you should take action to increase production to meet the increase in demand for your product.

3.3 You receive information that the main producer of joysticks has granted a 30% wage increase to their employees and that the price of joysticks is expected to increase by 10%. All else remaining equal, what impact can you expect this to have on the demand for your product? 4 points.

If the price of joysticks increases by 10%, then you could expect the quantity demanded for your product to decline by 25% (10%-2.5). Given this substantial decrease, you probably would want to decrease production or similar measures.*

4. Illustrate the short-run profitable equilibrium for a purely competitive firm, a monopolistic firm, an oligopolistic firm, and a monopolistic competitor. 15 points.

See class notes and textbook for illustrations.

5. In your own words, describe the differences between a purely competitive firm and a monpolistic firm. 10 points

A purely competitive firm is a price taker while a monopolist is a price maker.

The purely competitive firm competes solely on cost. The monopolist has no competition.

The costs of entry/exist in the purely competitive market is minimal, while in the monopolists market they are substantial.

Purely competitive firms make no economic profit in the long-run. Monopolists can sustain profits in the short-run.

The equilibrium condition for purely competitive firms is P=MR=MC, while for monopolists it is MR=MC.

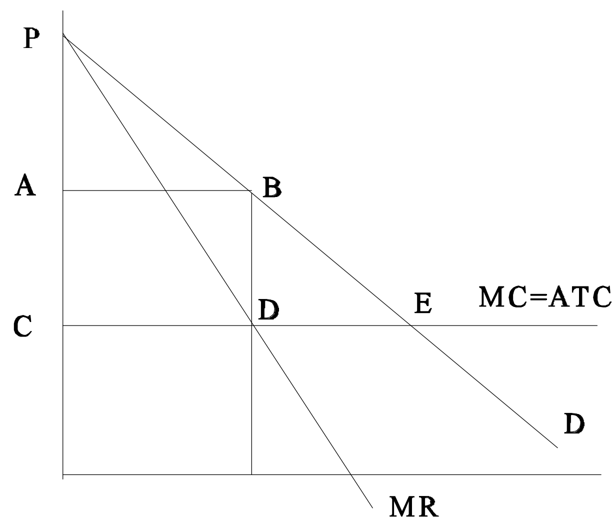
Purely competitive firms face a perfectly elastic demand curve. Monopolists face a downward sloping demand curve.

MR=P for pure competitors, MR=1/2 slope Demand for Monopolists.

Pure competitive does not create excess social costs while monopoly does.

6. In your own words, illustrate and explain the concept of price discrimination. 15 points.

Price discrimination occurs when a good is sold at different prices that do not reflect differences in the costs of production, that is, a supplier has the ability to control price (perhaps perfectly perhaps imperfectly). Price discrimination means that the supplier can increase profits by charging different prices to different purchasers, that is, $4 for the first unit, $3 for the second, and so on, and not one price for all the units sold.



If the monopolist can't price discriminate, then it would earn normal monopolist profits of ABDC. However, if it perfectly price discriminate, that is, charge consumers everything they would be willing to pay, it would earn the triangle PEC. The added profit would be the triangles PBA and BDE. If the firm is not able to imperfectly discriminate, then it can still segment buyers into different markets and charge higher prices to those with inelastic demands and lower prices to those with elastic demands.

7. In your own words, describe the relationship between normal goods, income, and income elasticity of demand. 15 points

Normal goods are positively related to increases in income, that is, as income increases, the demand for normal goods also increases, albeit at a lower rate than the increase in income. This means that income elasticity is positive but less than 1, whereas the income elasticity for luxury goods is positive and greater than one, and the income elasticity for inferior goods is negative.