McPeak PAI 897 Problem Set 6

Name:_____

All numbered questions are worth 2 points each, sub questions worth an equal share of these 2 points. 1) Complete the following table.

Output	Fixed Cost	Total Cost	Variable	Marginal	Average	Average
			Cost	Cost	Cost	Variable Cost
0	8			NA	NA	NA
1						15
2		37				
3			42			
4				15		
5			74			
6		100				
7		120				
8					18	

- a) Is this a short run or long run information on cost? Why?
- b) If the price of the good produced is currently 15, what level of output meets the profit maximizing condition?
- c) Draw a figure illustrating the average cost, the average variable cost, and the marginal cost curves based on the information in this table.

- 2) You know that the demand curve is defined by the following function: P=66-3*Q.
 - a. Use the bisection rule to define the marginal revenue curve

b. If total cost is defined by 6*Q, then you know MC is 6 for all possible levels of Q. What is the value of Average Cost? Explain.

c. At what Q do marginal cost and marginal revenue cross?

- d. What is the selling price for a monopolist?
- e. Why is the firm not better off setting Q=0 and shutting down rather than producing at the Q you noted in (c)? Explain your reasoning briefly

- 3) Continue with the demand curve from (2) and the MC=6 supply curve. Assume the market for this commodity was to become a perfectly competitive market for some reason.
 - a. What are the market price and amount of quantity in the market if all firms in the competitive market had identical cost structures to the monopoly firm (MC=6) and the demand curve was unchanged?

b. Show the competitive case in comparison to the monopoly case on a single graph.

c. <u>Calculate the values to fill in the table.</u>

	Monopoly	Perfect Competition
Consumer Surplus		
Producer Surplus		
Deadweight Loss		
Total Social Welfare		

4) Circle the correct answer for each.

- i. In a perfectly competitive market the area corresponding to producer surplus is the area:
 - 1. Below the demand curve and above the price line to the left of the optimal quantity.
 - 2. Above the demand curve and below the supply curve to the right of the optimal quantity.
 - 3. Above the supply curve and below the price line to the left of the optimal quantity.
 - 4. Below the supply curve and above the x –axis to the left of the optimal quantity.
- ii. A Natural Monopoly:
 - 1. Is the only purchaser of a good for which there are many sellers.
 - 2. Has first mover status due to some structural feature of decision making that allows them to move first and their competitors then react.
 - 3. Is regulated by a price ceiling where the ceiling is defined at the price at which the marginal willingness to pay curve crosses the marginal cost curve.
 - 4. Is characterized by marginal cost values below average cost values for the entire range of the demand curve.
- iii. A monopolist:
 - 1. Chooses a price-quantity pair according to a best response function defined in terms of reactions to a competitor in the market.
 - 2. Is the only supplier of a good for which there is no close substitute.
 - 3. Is the only person named Polly in a class.
 - 4. Is the only buyer of a good which has multiple suppliers.
- iv. The long run supply curve for the individual firm in a perfectly competitive market is:
 - 1. The marginal cost curve at and above the point where AC(Q)=MC(q), q=0 elsewhere.
 - 2. The average fixed cost curve at and above the average cost curve, q=0 elsewhere.
 - 3. The inverse of the industry supply curve.
 - 4. The horizontal summation of the price-quantity pairs that define the price-consumption curve.