McPeak
PAI 897
Problem Set 6

Name:______________________________

1) Complete the following table.

Output	Fixed Cost	Total Cost	Variable Cost	Marginal Cost	Average Cost	Average 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. Calculate the values to fill in the table.

	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.