

## PROBLEM SET ONE--MBA 5110

1. Start with the following supply & demand schedules:  $P = 200 - 2Q$  &  $P = 20 + 4Q$ .
  - a) Find the market-clearing (equilibrium)  $P$  &  $Q$  and the  $E_p^{\text{demand}}$  &  $E_p^{\text{supply}}$  at the equilibrium  $P$  &  $Q$ .
  - b) If there is a \$30 tax on sellers, find the equilibrium  $P$  &  $Q$ . What are the *net* prices to buyers & sellers?
  - c) With no tax on sellers, but a \$30 tax on buyers, find the equilibrium  $P$  &  $Q$ . What are the *net* prices to buyers & sellers?
  - d) What is the incidence of either tax?
  
2. If  $F$  is large &  $MC$  is very low, what are the implications for the # of firms & the form of competition?
  
3. Suppose  $C = 9000 + 10q^2$ . Find the output at the minimum point of the  $AC$  curve. What are  $MC$  and  $AC$  at that point?
  
4. Suppose a price taker has  $C = \$1800 + 2q^2$  and  $P = \$100$ .
  - a) Find the firm's profit-maximizing  $q$  and its  $\pi$ .
  - b) If each firm has identical cost, is the market in long run equilibrium? If it is not, what will happen & what will  $P$  equal in the long run? If  $\pi < 0$  currently, *will* each firm operate?
  
5. If  $MC$  falls for all firms in a market, what happens to  $P$ ,  $Q$ , &  $\pi$ ? How does the market  $E_p^{\text{demand}}$  affect your answer?