Problem Set #2   Name_____
PAI 723
Professor John McPeak   Due _____

1) The US government places a price floor on the producer price of milk. Currently,
   farmers receive $2.00 per gallon of milk, and 400,000 gallons are sold per day.

   a) If the price floor is set at $3.00 per gallon, what will happen to the equilibrium
      quantity supplied and demanded (show on a graph and label everything)?

   b) If the price floor is set at $1.00 per gallon, what will happen to the equilibrium
      quantity supplied and demanded (show on a graph and label everything)?

   c) In either (a) or (b), will there be excess supply or demand?   Y   N
        i. If so, in which case(s) will it occur and is it excess supply or excess
            demand?

2) The price of gasoline is $2.00 and the price elasticity of demand is -0.4.
   a) How much will a 10% reduction in quantity placed on the market increase the price?

   b) If -0.4 is a short run elasticity, do you expect that this price increase brought about by this reduction in quantity will be more or less in the long run? Why?

3) Consumers purchased 600 million oranges this year at a price of $0.22 per orange. Last year, purchases were 612 million oranges at a price of $0.20 per orange.

    a) Graph these two points, labeling all axes.

    b) If these two points are along a given demand curve, does this demand curve disprove the law of demand? Why or why not?

    c) If these two points are along a given demand curve, what does this information tell you is the price elasticity of demand for oranges? (calculate using last year's data in the denominator)

4) Say we know that the current price elasticity of demand for Twinkies is -9.0.

    a) Is the price elasticity of demand for Twinkies inelastic or elastic?

    b) How much would purchases fall from their current level of 100 million units / day if the price of Twinkies is increased by 10%?

5) Say that you know that the inverse demand curve for home improvement magazines is: $p=20 - (1/5)*Q_d$ (where p is the price and Q_d is the quantity demanded), and the (inverse) supply curve can be expressed in a similar fashion by $p=(1/5)*Q_s -5$.

   a) What is the equilibrium price quantity pair?

   b) If a $1 tax per unit of Q is put on producers, what will be the equation representing the supply curve?

   c) What will be the new equilibrium?

   d) What is the incidence of tax on consumers in this case?

   e) Draw a graph representing the original situation (as in part a), and the new situation (as in parts b-d). Note the tax revenue.

f) What price elasticity of demand is implied by this change (use the original equilibrium pair in this calculation)?

g) If price elasticity of demand was more elastic than this, how would the incidence of tax on consumers change?

6) Your friends Green Gary and Fox-Fan Frieda are arguing again. Today, they are arguing about whether the government should or should not increase the specific tax on gasoline in the US. They have asked you, the expert economist, to help settle their argument. You remember from class discussion that the **own price elasticity of demand for gasoline is inelastic both in the short run and the long run**. Assume that the price elasticity of supply for gas is unit elastic in your response.

a) Green Gary argues that the US uses too much gasoline and this has a negative environmental impact. He supports the idea of a specific tax on suppliers. He predicts that placing a specific tax on suppliers will bring about a smaller percentage change in the price consumers pay than the percentage change in quantity demanded. Is he right? Why or why not.

b) Fox-Fan Frieda says that Green Gary's specific tax will place a massive burden on the strategically important gasoline production industry and this will threaten our national security. She argues that the specific tax should be placed on consumers, since this will reduce the burden of the tax on this critically important industry and divert the burden to the consumers who are less critical to our national security (!!!). Is she right about the economics here? Why or why not Explain using supply and demand graphs and note the implications for incidence of the tax on suppliers and demanders.