Exam One Name: ________________________
PPA 723, Fall 2012
Professor John McPeak

The total exam is worth 20 points. Each question is worth 2 points, and each sub question is worth an equal share of the two points.

1) The demand curve is given to you as Q=80-12*p.
   a. Fill out the following table (use the relatively higher price / relatively lower quantity pair in the elasticity calculation).

Price	Quantity	Elasticity
$1.00		------------------------------
$2.00		
$3.00		
$4.00		
$5.00		

   b. Draw this demand curve with price on the y-axis and quantity on the x-axis. Identify the range over which the demand curve is inelastic and over which it is elastic.

2) Say that you know that the inverse demand curve for pink fuzzy slipper pairs is: $p=20 - Q_d$ (where p is the price per pair of slippers and Q_d is the quantity of slipper pairs demanded), and the (inverse) supply curve can be expressed in a similar fashion by $p=Q_s - 6$

a) What is the equilibrium price quantity pair if the market for umbrellas is perfectly competitive?

b) If a specific tax of $2.00 is put on producers per pair of slippers, what will be the new equilibrium quantity, price consumers pay, and price sellers get?

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

d) Would your answer to (c) change if instead of placing the specific tax on the producers we collected it from consumers? Why or why not?

3) If p_1 =10, p_2=20, and Y=400

   a. Draw the budget constraint.

   b. Show how you can derive the price consumption curve for a given consumer's preferences (drawn as you like so long as they obey the properties of indifference curves discussed in class) using: p_1 = 5 all else constant, the p_1 = 10 line you drew for (a), and p_1 = 20 all else constant.

   c. Show how to derive the individual's demand curve from the information contained in your graph in (b).

4) The Museum of Science and Technology is considering raising the price of an annual family membership from \$60 to \$69. If the number of annual family memberships currently sold is 15,000 and the best available information suggests that the short run price elasticity of demand for annual family memberships is -1.1, answer the following questions.

a. What is the predicted membership level after the price is raised in the short run?

b. Compare total revenue from annual family memberships at a price of \$60 with total revenue at a price of \$69 given you answer to (a). Which price leads to higher total revenue in the short run?

c. If -1.1 is the sort run price elasticity of demand and the long run price elasticity of demand is -2.0, what will be the long run membership level and revenue if the price is raised to \$69?

5) I know the price of one donut is $1.00 per unit and the price of one cup of cider is $3.00 per unit. The marginal utility of a donut at a bundle the consumer is considering buying is 3 and the marginal utility of cider is 4. This bundle is on the budget line.

a. Explain why the bundle the consumer is considering buying is not the optimal bundle.

b. Is the optimal bundle going to be composed of more donuts and less cider or fewer donuts and more cider than the bundle under consideration? Why?

c. Show on graph that illustrates sample indifference curves and budget constraints where the consumption bundle described in the introduction to this problem lies in relation to the optimal bundle.

6) A food stamp policy is put in place in a state. For our representative consumer impacted by this policy, their initial income of \$1,000 is supplemented by a cash value of food stamps of \$100. The initial budget constraint is $y = p_f \cdot f + p_o \cdot o$, where f is food, o is all other goods, y is income and the two prices are subscripted by their commodity.

   a. Draw the original budget line and the budget line after the food stamp policy is implemented.

   b. Illustrate on another graph the indifference curves for a consumer **for whom it does matter** whether he or she is given \$100 in cash or \$100 worth of food stamps in terms of the optimal bundle he will consume after being given the food stamps.

   c. Explain what happens in your graph to the level of consumption of the other good after the food stamps are given and why this happens.

7) Circle whether the statement is true of false:

a. A price decrease for a good that is inferior will have a larger total effect than substitution effect.

TRUE FALSE

b. To arrive at the optimal bundle, the consumer adjusts the composition of their consumption bundle to bring their marginal rate of substitution in line with the market determined marginal rate of transformation.

TRUE FALSE

c. A positive income elasticity indicates the good in question is a normal good.

TRUE FALSE

d. In a corner solution of a two commodity world, the consumer consumes zero amount of one of the commodities and allocates all of their income to the other commodity.

TRUE FALSE

e. The opportunity set becomes smaller when a consumer's income increases and prices are held constant.

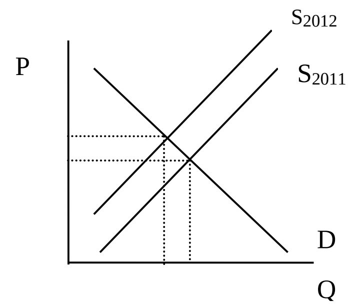
TRUE FALSE

f. A good for which there is an inelastic price elasticity of supply has a larger percent change in quantity than the corresponding percent change in price.

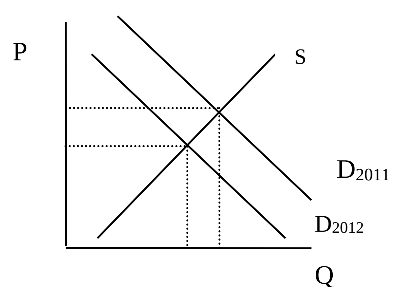
TRUE FALSE

8) The market in question is the Central New York market for natural gas in January to April 2012 compared to January to April 2011. Is the explanation provided for the illustrated shift consistent with the graph? Why or why not.

   a. New regulations passed in fall 2011 allowed natural gas hydrofracking operations to begin production by January 2012, where hydrofracking has lower costs of production than the methods of extraction used before the regulation was passed..



   a. January 2011 to April 2011 was much colder than January 2012 to April 2012.



9) Compared to this time last year, the price per pound of candy corn has gone up by 5% and the quantity demanded has decreased by 4%. The American Dental Association (ADA) is claiming credit for this decrease in quantity demanded as being due to an ad campaign they are currently running to encourage parents to avoid candy corn this Halloween. The United States Department of Agriculture (USDA) is claiming that the price increase reflects increases in the price of corn syrup that is used to make candy corn due to the drought in the Midwest negatively impacting corn harvests.

   a. Graph the ADA's argument on a supply and demand graph for candy corn.

   b. Graph USDA's argument on a supply and demand graph for candy corn.

   c. Which explanation is more consistent with the facts given in the introduction to the problem above? Justify your answer.

10) Taxes. In each case, describe the original pre-tax equilibrium price-quantity pair, and following imposition of the tax the price paid by consumers, the price received by producers, the size of the tax revenue, and the quantity supplied / demanded.

a. Illustrate the impact of a specific tax placed on producers.

b. Illustrate the impact of a specific tax placed on consumers.

c. Illustrate the impact of an ad valorem tax placed on consumers.