Quiz One Name: ________________________
PPA 723, Fall 2004
Professor John McPeak
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The total quiz 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=30-5*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, over which it is elastic, and note the unit elastic point according to your answer to a.

2) If food is $5 per unit, and the price of all other goods is $20 per unit. The consumer's income is $500.

a. Draw the consumer's budget constraint.

b. If the price of food increases to $10 per unit, draw the consumer's new budget constraint.

c. If the price of food decreases to $2.50 per unit, draw the consumer's new budget constraint.

d. Place all three budget lines (with price =$2.50, price = $5, and price = $10) on a single graph, and draw indifference curves to illustrate the derivation of the price-consumption curve.

3) You are given that $p=24-2*q$ is the inverse demand curve and $p=8+2*q$ is the inverse supply curve.

a. What is the equilibrium price quantity pair if the market is perfectly competitive?

b. Illustrate the effect of a price ceiling set at $10 on a graph.

c. Describe the outcome of this policy in terms of quantity supplied and quantity demanded. If there is excess supply or excess demand, describe the size of it in terms of the quantity of the shortage or surplus.

4) Over the past three months, the price of **natural gas** has increased by 4%. Elmo tells Zoe that this is because consumers have increased use of natural gas since **electricity** prices have increased by 20% over this period. Zoe tells Elmo the reason for the price increase is that the supply curve for **natural gas** has shifted due to pipeline disruptions in low cost areas of natural gas production..

a. Graph Elmo's argument on a supply and demand graph.

b. Graph Zoe's argument on a supply and demand graph.

c. If the equilibrium quantity of natural gas in the market increased over this time period, does Elmo or Zoe have a theory consistent with the evidence? Why?

5) Tax policy.

a. Illustrate on a supply and demand graph a specific tax of size τ placed on suppliers.

b. Illustrate on a supply and demand graph a specific tax of tax of size τ placed on consumers.

c. Define the concept of consumer incidence, and illustrate how it applies to the graphs you drew in a and b.

d. If demand was more inelastic at the equilibrium point without the tax than the demand curve you drew in a, and the supply curve is unchanged, will consumer incidence increase or decrease when the specific tax of size τ from problem a is placed on suppliers? (circle the correct answer)

Increase

Decrease

6) The local symphony is considering raising the price of annual membership from \$100 to \$120. If the current membership level is 10,000 and the best available information suggests that the price elasticity of demand for annual symphony membership is -1.2, answer the following questions.

a. What will be the membership level if the price is raised?

b. Compare total revenue for the symphony at the price of \$100 and at the price of \$120. Which is higher?

7) I know the price of bacon is $1.00 per unit and the price of eggs is $2.00 per unit, the marginal utility of bacon at a bundle the consumer is considering buying is 3 and the marginal utility of eggs 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 bacon and less eggs or less bacon and more eggs than the bundle under consideration? Why?

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

8) Indifference curves.

a. Define an indifference curve.

b. Define the concept of “transitivity” and use this definition to explain why indifference curves can not cross.

c. Is the shape of the indifference curve determined by income and market prices of the two goods or the consumer’s perception of the substitutability of the two goods? (circle the correct answer)

income and market prices of the two goods

consumer’s perception of the substitutability of the two goods

d. Draw an indifference curve for two goods that are perfect complements.

9) The good in question is cheddar cheese, and we can assume that the market for this good is perfectly competitive and currently at an equilibrium point. We are given results that indicate: crackers are a complement of cheddar cheese; goat cheese is a substitute for cheddar cheese; cheddar cheese is a normal good. In all cases illustrate the impact of the described event **on the supply and demand graph for cheddar cheese**.

a. Illustrate the impact on a supply and demand graph for cheddar cheese of a **decrease in the price of crackers**.

b. Illustrate the impact on a supply and demand graph for cheddar cheese of a **decrease in the price of goat cheese**.

c. Illustrate the impact on a supply and demand graph for cheddar cheese of an **increase in consumers' income**.

d. Illustrate the impact on a supply and demand graph for cheddar cheese of an **increase in the price of milk** (which is used to make cheddar cheese).

10) Say we know that the price of a specific cholesterol control medicine increased by 12% and the quantity demanded decreased by 4% over the past year

a. What is the implied elasticity?

b. Is this a supply elasticity, an own price demand elasticity, a cross price demand elasticity, or an income elasticity of demand? (circle the correct answer)

   supply elasticity

   own price demand elasticity

   cross price demand elasticity

   income elasticity of demand

c. If I ask you whether this change occurred due to an increase in consumer concern over cholesterol due to a health campaign that took place over the past year, or a increase in the cost of supplying the drug due to new federal regulations on the production of the drug, which is more consistent with the facts and why? Illustrate using supply and demand graphs.