

Exam One
PPA 723
Professor John McPeak

Name _____
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Total exam is worth 20 points, each numbered question is worth 2 points, and each sub question (the a / b / c / d parts) are worth equal shares of the two points.

1) Taxes. In all cases, describe the original equilibrium price quantity pair, the price paid by consumers, the price received by producers, the size of the tax revenue, and the quantity supplied / demanded when the tax is imposed.

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

b. Illustrate on a graph the impact of an ad valorem tax placed on consumers.

c. Explain the concept of consumer incidence using the graph you drew for (b).

2) You are given that $p=500-40*q$ is the inverse demand curve and $p=100+60*q$ 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 \$300 on the 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 (calculate numbers here).

- 3) I know the price of wallpaper is \$4.00 per unit and the price of paint is \$2.00 per unit. At the bundle the consumer is considering buying the marginal utility of wallpaper is 3 and the marginal utility of paint 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 wallpaper and less paint or less wallpaper and more paint 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.

4) Circle whether the statement is true or false:

- a. A price decrease for an inferior good will have a smaller total effect than substitution effect.

TRUE FALSE

- b. 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

- c. Indifference curves will cross if there is an ad valorem tax placed on one of the goods.

TRUE FALSE

- d. In a two good world, both goods must be normal to avoid violating the “more is better than less” assumption about preferences.

TRUE FALSE

- e. The opportunity set becomes larger when a consumer’s income increases if prices are unchanged.

TRUE FALSE

- f. The slope of the indifference curve reflects the willingness of the individual to trade off a given amount of one good to obtain a given amount of another good

TRUE FALSE

- 5) A food stamp policy is put in place in a state. For our representative consumer impacted by this policy, their initial income of Y is supplemented by a cash value of food stamps of \$50. The initial budget constraint is $y = p_f \cdot f + p_o \cdot o$, where f is food, o is all other goods, and the two prices are subscripted by their commodity.
- Draw the original budget line and the budget line after the food stamp policy is implemented.
 - Illustrate on another graph the indifference curves for a consumer for whom it does not matter whether he is given \$50 in cash or \$50 worth of food stamps in terms of the optimal bundle he will consume after being given the food stamps.
 - Does $MRS=MRT$ at the bundle the consumer consumes after the food stamp policy is implemented? Why or why not.

6) Compared to last year, the price of rainbow bars in Care a Lot (the land where the Care Bears live and eat these rainbow bars) has come down by 7%. Share Bear claims that it is because average Care Bear income in Care a Lot has come down over the past year as many of their caring tasks have been outsourced to lower cost animated cartoons based in the Forest of Feelings. Grumpy Bear begs to differ. He claims that the price reduction came about because of his technological innovations that have been applied to the rainbow bar production process in Care a Lot over the past year.

a. Graph Share Bear's argument on a supply and demand graph.

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

a. Which explanation is more consistent with the facts if the quantity sold of rainbow bars increased by 4% over the past year? Justify your answer.

7) If $p_1 = 10$, $p_2=10$, and $Y=500$

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 the example of $p_1 = 5$ all else constant, and $p_1 = 20$ all else constant.

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

d. Describe how to use the information from multiple individuals' demand curves to arrive at the market demand curve.

8) Match the outcome to the policy that could generate it and **show the impact on a supply and demand curve**. Label all curves, axes, and points.

Policy:

Price floor.

Price ceiling.

An ad valorem tax on consumers.

Relaxing production regulations.

Outcome

Policy

(illustrate underneath the line)

Quantity supplied is greater than quantity demanded in equilibrium.

Equilibrium price paid by consumers increases and quantity sold decreases

A black market exists where the good is exchanged at a price above the official price.

Equilibrium price received by producers decreases and quantity sold increases

9) The demand curve is given to you as $Q=80-10*p$.

- 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.

10) A local ski area is considering raising the price of an annual pass from \$1,000 to \$1,250. If the number of annual passes sold currently is 1,000 and the best available information suggests that the price elasticity of demand for annual passes is -2.0, answer the following questions.

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

b. Compare total revenue for the ski area at the annual pass fee of \$1,000 and at the price of \$1,250. Which is higher?

c. Will a price decrease for the annual fee to \$900 from \$1,000 raise or lower annual revenue from the baseline of \$1,000 and 1,000 passes? By how much?