

Final  
PPA 723, Fall 2007

Name: \_\_\_\_\_

The total final is worth 30 points. Each question is worth 2 points, and each sub question is worth an equal share of the 2 points.

1) Types of Goods.

a) What type of good goes in which blank?

	Rival	Non Rival
Exclusion		
Non Exclusion		

b) Illustrate how deriving the aggregate demand curve for a public good differs from deriving the demand curve for a private good, and explain how this difference relates to your answers to (a).

Aggregate demand for a private good:

Aggregate demand for a public good:

Explain why these differ:

2) Public goods, voting, and benefit cost.

Onondaga County is considering modifying the waiting area at Hancock airport. Option one is to install an exhibit focusing on the history of flying dinosaurs. Option two is to install an exhibit presenting the collection of liquids and lotions collected at the security checkpoint since the 3 oz. restriction went into effect. The third option is an exhibit explaining the process of deicing airplanes before takeoff. Each project will cost 3000 to install, and any passing with a majority vote will be installed even if more than one passes.

There are three households who will share the costs of the project equally (1000 each) if it wins a majority of votes. The following table reports each household's willingness to pay for each of the three proposed projects.

	Dinosaurs	Liquids and Lotions	Deicing
McPeak	400	1700	1100
Popp	1700	100	1200
Wilcoxon	900	0	100

a) How will each household vote if they are allowed to vote "yes" or "no" to each project? (circle)

	Dinosaurs		Liquids and Lotions		Deicing	
McPeak	Yes	No	Yes	No	Yes	No
Popp	Yes	No	Yes	No	Yes	No
Wilcoxon	Yes	No	Yes	No	Yes	No

b) If the costs presented above are present value costs, and the willingness to pay figures are present value benefits, what is the net present value of each project?

c) Did voting lead us to select projects that had positive net present value? Explain why or why not.

3) 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 \$100. 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.

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

b. Reproduce your graph for (a), but now place on the graph indifference curves for a consumer who is made equally well off if we give the consumer \$100 in food stamps or \$100 in cash.

4) If  $p_1 = 10$ ,  $p_2=10$ , and  $Y=1000$

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 the budget line in (a), a budget line if  $p_1 = 5$  all else constant, and a budget line of  $p_1 = 20$  all else constant.

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

5) The demand curve is given to you as  $Q=8-p$ .

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.





8) Cost.

a. Complete the following table.

Total Output	Fixed Cost	Total Cost	Variable Cost	Average Variable Cost	Average Fixed Cost	Average Cost	Marginal Cost
0	10	10	-----	-----	-----	-----	-----
1							15
2			29				
3		52					
4		66					
5						17	

b. Is this short run or long run cost information? Why?

c. If market price for the output produced is 13, what level of output is profit maximizing for a firm if the market structure is perfectly competitive?



10) Public goods.

a. There are three people who live in a town. We are considering the demand for the number of hectares of public parkland, where  $q$  is the hectares of park area accessible to all three people. Dora's demand is defined by  $90 - q$ . Isa's is defined by  $30 - 3q$ . Benny's is defined by  $150 - q$ . What is total marginal willingness to pay on the societal demand curve for the provision of the 20<sup>th</sup> hectare of parkland?

b. If the marginal cost of public parkland provision is constant at 100 per hectare and no effort is made to avoid the free rider problem, what number of hectares of park land will be provided and who will provide it? How many hectares less is this than the socially optimal level at this cost of provision per hectare?

11) Tax policy.

a. Illustrate on a supply and demand graph a specific tax of size  $\tau$  placed on consumers.

b. Illustrate on a supply and demand graph what happens if producers attempt to pass on to consumers the all of a specific tax of size  $\tau$  placed on producers.

c. Illustrate on a supply and demand graph the impact of an ad valorem tax rate of  $\alpha$ .



13) The demand curve is defined by the relationship  $p=100-20*q$ . Marginal cost is defined by the curve  $MC=20$ .

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

b. What is the price quantity equilibrium if the market structure is monopolistic?

c. Calculate the magnitude of consumer surplus, producer surplus and deadweight loss in this problem.

	Consumer Surplus	Producer Surplus	Deadweight Loss
Perfect Competition			
Monopoly			

14) The price of season tickets for the SU football team is expected to go down next year compared to this year. Which of the following explanations for this anticipated outcome can you rule out, and which can you not rule out.

Explanation	Rule out (circle)	Not Rule Out
Consumers' income in the CNY area will go up significantly over the next year.	Rule out	Not Rule Out
Remodeling in the dome has increased the number of seats that will be available.	Rule out	Not Rule Out
A new semi-pro football team in the area next year will draw consumers away from SU football.	Rule out	Not Rule Out
New safety standards in the dome require increased security costs.	Rule out	Not Rule Out
It is widely believed that the team will be worse next year.	Rule out	Not Rule Out
A new report will identify negative health effects of toxins released when cooking food at the concession stands in the dome.	Rule out	Not Rule Out

15) Circle the correct answer

Condition A	Condition B	What type of condition is B for establishing A?
One can get to Pittsburgh from Syracuse	There are daily flights to Pittsburgh from Syracuse	N, NS   S, NN   N,S
The firm is a price taker	The market is perfectly competitive	N, NS   S, NN   N,S
The market is perfectly competitive	The firm is a price taker	N, NS   S, NN   N,S
There is no close substitute for a good	The good is produced by a monopolist	N, NS   S, NN   N,S
Production is economically efficient at q.	Production is technologically efficient at q	N, NS   S, NN   N,S
The good is a public good.	The good is characterized by non-rivalry	N, NS   S, NN   N,S
A quantity is the profit maximizing quantity	The quantity is produced in an economically efficient way.	N, NS   S, NN   N,S
The last dollar rule is satisfied at a bundle	MRS=MRT at a bundle	N, NS   S, NN   N,S

N,NS : Necessary, not sufficient

S, NN: Sufficient, not necessary

S,N: Necessary and sufficient

Work Page 1

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