

# Econ 2: Spring 2014: Sample Midterm II

1. Identifications (20 minutes—if you are not through after 20 minutes, skip to the next question): Briefly, in one or two sentences, explain the terms set out and how they have been used in the course so far:

a. Supply Curves

b. Producer Surplus

c. Non-rivalry

d. Equilibrium

2. (20 minutes—if you are not through after 20 minutes, skip to the next question):  
Suppose we have the demand curve:  $P_d = 1000 \times Q^{-1.5}$

a. Pick a point on the demand curve. Calculate the elasticity of demand at that point.

b. Go back to the same point you picked in (a). Now pick the point on the demand curve with twice the quantity produced that you originally chose. Which point on the demand curve sees a greater dollar volume of sales?

c. What is the relationship between your answer to (a) and your answer to (c)?

3. (20 minutes—if you are not through after 20 minutes, skip to the next question): Suppose we have a demand curve for Atlantic cod right now this year, in tons of fish and thousands of dollars per ton:  $P_d = 40 - 0.001Q$ ; and suppose we have a supply curve for Atlantic cod of  $P_s = 4$

a. Draw the supply and demand curves.

b. Calculate the equilibrium price and quantity. Calculate the equilibrium producer and consumer surplus.

c. Suppose we notice that there is an externality cost: the total burden from resource depletion by this year's fishing is:  $XC = 10 \times Q$ —each ton of fish landed costs an extra ten thousand dollars in resource depletion. What tax would you impose on the fishing industry, and why?

d. Would you think that fishers would be very upset at this tax, and lobby against it? Why or why not?

4. (20 minutes): Go back to our first-run opening-week movie-industry monopoly example: 2000 people in the town; one movie theatre; ample capacity to seat everyone who might want to come to see this week's first-run movie. Demand Curve:  $P_d = 20 - .02 Q$ . No variable or marginal costs of showing the movie to more people: a non-rival good. Suppose that it costs \$6000 to make a movie.

a. How many people should see the movie if we are to maximize societal well-being? What price should be charged to moviegoers? How much consumer surplus is there? How much is there in the way of costs that must be covered somehow?

b. Suppose people worry that government bureaucracies will produce lousy movies, so it is decided not to nationalize the movie industry but instead to let a monopoly make and show movies. What happens?

c. Suppose that we do nationalize the movie industry, and pay for it by imposing a \$3 a person "movie tax" on everyone in the town. Relative to monopoly, and relative to no movies being shown, who gains and who loses from this scenario?

d. What would you think of a proposal to encourage better movies by doubling the movie tax and giving an annual prize to the best movie as voted by moviegoers as a way of keeping the bureaucracy from leading to low-quality movies?