

EC314-Fall 2010 Problem Set 6

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When you write up your answers, your goal should be to (1) be correct, and (2) convince your reader that your answer is correct. Answers which do not achieve these goals will not be awarded full credit. To accomplish the second objective, it is helpful if your work is legible and if all steps are presented, possibly with a line of explanation. **Please STAPLE pages together so that we do not lose them.** (This problem set updated: 18 August 2010).

Problems

1. Suppose that the growth equation for a stock of fish is

$$F(X) = rX \left(1 - \frac{X}{k}\right)$$

and the harvesting technology is

$$H = qXE.$$

Further suppose that $q = 1, k = 1, r = 2$. Let the cost of effort be c and the price of harvested fish be 1.1

- (a) Illustrate the steady state open access equilibrium on a graph which shows AR, MR, and MC curves.
 - (b) Illustrate the steady state open access equilibrium on a graph which shows Total revenue and Total Cost Curves.
 - (c) Solve for the steady state open access equilibrium level of stock, harvest, and effort.
 - (d) Illustrate the steady state private property equilibrium on a graph which shows AR, MR, and MC curves.
 - (e) Illustrate the steady state private property equilibrium on a graph which shows Total revenue and Total Cost Curves.
 - (f) Solve for the steady state private property equilibrium level of stock, harvest, and effort.
2. Explain why an open access fishery dissipates all rents in the fishery. (A good answer requires only a few sentences)