1. (5 points) President Gates is considering the construction of a new building to house the Department of Energy Without Oil. One of his advisors replies, “Don’t build yet, procrastination might be optimal.” Explain what the advisor means.

2. (6 points) True or false and explain. Total external cost and welfare cost are basically the same. Both refer to a cost to society that is not reflected in the market. In your answer you should include a graph.
3. A survey of members of the Blue Lake Fishing Club fish more if they live close to the lake than if they live far away. The table below presents the number of trips taken by members during the fishing season.

<table>
<thead>
<tr>
<th>City</th>
<th>Distance from lake</th>
<th>Travel cost per trip $</th>
<th>Trips taken per season</th>
</tr>
</thead>
<tbody>
<tr>
<td>Redville</td>
<td>7 miles</td>
<td>2</td>
<td>16</td>
</tr>
<tr>
<td>Greenville</td>
<td>12 miles</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>Orangeville</td>
<td>19 miles</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Pinkville</td>
<td>26 miles</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Brownville</td>
<td>48 miles</td>
<td>14</td>
<td>1</td>
</tr>
</tbody>
</table>

a. (4 points) Suppose that the price of gas triples so that everyone’s cost per trip exactly triples. Using the travel cost model and the data in the table, how many trips would you predict that members from Redville would take after the price increases?

b. (6 points) Using the travel-cost method and assuming that the preferences of all members of the club are the same, estimate the surplus that is obtained by members of the club who live in Pinkville.
4. (12 points) Consider the basic graph of marginal willingness to pay of consumers of a good and the marginal cost to produce that good.
In the spaces provided, list the three characteristics of efficient property rights and, referring to the graph, explain how these characteristics lead to an efficient market. Your may answer by explaining how an inefficient outcome results if the characteristic is not satisfied.

Characteristic 1)

Characteristic 2)

Characteristic 3)
5. The graph below shows the marginal costs to a firm to produce the good Q, and the marginal willingness to pay for the consumers for that good.

![Graph showing marginal costs and marginal willingness to pay](image)

a. (2 points) If the firm produces 40 units, what would be its cost of producing one more good?

b. (2 points) If the good were sold at $15 per unit, how many units would the consumers demand?

c. (2 points) What would be the market clearing price and quantity?

d. (2 points) Referring to a number or an area on the graph, what are the net benefits provided by the market equilibrium?

e. (2 points) Suppose production of the good caused an external cost $5 per unit produced. What would be the total external costs at the market equilibrium?

f. (2 points) Suppose production of the good caused an external cost $5 per unit produced. What would be the socially efficient level of production?
Clippings Questions

6. (10 points) Identify one use-value and one non-use value that has been generated by the salmon-recovery efforts discussed in the article. Make clear that you understand the notion of *economic benefits* as it is applied to these efforts.

7. (10 points) Identify two costs that are associated with the plan to restore salmon populations in Maine. Make clear that you understand the notion of *economic cost* as it is applied to these efforts.
8. (10 points) Suppose that two analysts were asked to carry out a benefit-cost analysis of the program to restore wild salmon in Maine. Analyst A is asked to carry out a one-step benefit cost analysis and Analyst B is asked to conduct a complete benefit cost analysis.

a. What fundamental question would Analyst A be seeking to answer?

b. What fundamental question would Analyst B be seeking to answer?

c. Name and very briefly explain a method that would be used to place a dollar value on a use value generated by the project.

d. Name and very briefly explain a method that would be used to place a dollar value on a nonuse value generated by the project.
Based on “After a Seven-Year Ban, Salmon Fishing Returns to Maine”
By PAM BELLUCK

EDDINGTON, Me. — Wild Atlantic salmon are a fisherman’s Holy Grail. But since 1999 when Maine closed its rivers to salmon fishing to save the fish, there was no place left in America to fish for wild Atlantic Salmon.

Now, with salmon slowly returning, Maine has opened its first wild salmon season in seven years.

People are coming from as far as Washington State and South Carolina to cast their lines in hopes of landing one of these fabled fish.

But this isn’t just for fishermen. “A lot of the clubs have people who don’t fish anymore because they can’t, but 20 years ago they caught a salmon,” Mr. Wengrzynek said. “It’s not about fishing, it’s about the social structure. When there’s one person fishing, there’s 20 people watching, and, by extension, that’s 21 people fishing.”

So it was not surprising that Charlie Colburn, 84, showed up, even though arthritis keeps him from casting a line. “Holy mackerel,” he said, cane-hobbling along the riverbank.

But the king of all fish has proven vulnerable to manmade meddling. Pollution from paper mills, blasting by logging companies, and dams that impede salmon migration helped slice the salmon population to 530 in 2000, from nearly 5,000 20 years ago.

In addition to the fishing ban, efforts to restore salmon have included restocking fish and tracking them with transponders. An environmental coalition is now raising $25 million to tear down two hydroelectric dams.

But while removing the dams will restore thousands of salmon, it will take years. And some worry that the fish are not yet ready for fishing. “Can we continue to have positive restoration efforts at the same time we’re conducting recreational angling? Should we have waited until next year to start recreational fishing? No one will ever know.”

“I was last here when fishing ended, and I’m here today,” Mr. Bader said. “Three years ago I heard that they were trying to bring the salmon back and I jumped for joy. It’s amazing, really part of history. It’s what every fisherman strives to achieve — catching Atlantic salmon. It’s what I want to achieve, especially on the Penobscot River.”