1. Minks today are found both in the wild and on mink farms. Assume a mink fur craze overtakes the world. This craze is predicted to last a very long time. Everyone wants coats made from the furs of that fuzzy little animal, the mink. Assume the Canadian government takes no active steps to protect the mink. What is a likely result?
   a. The population of both wild minks and minks on farms will likely rise.
   b. The population of wild minks will likely rise. The population of farm raised minks will likely fall.
   c. The population of wild minks will likely fall. The population of farm raised minks will likely rise.
   d. The population of both wild minks and minks on farms will likely fall.

Answer #’s 2 – 4 based on the supply and demand curves at right. The supply and demand curve shown are prior to any government intervention in the market. Assume that $20 in **external benefits** are produced every time a unit of the good is produced, sold, and consumed.

2. To what level of production will unregulated private markets go?
   a. 250   b. 300
   c. 350   d. 400
   e. none of the above

3. What is the socially optimal level of production?
   a. 250   b. 300
   c. 350   d. 400
   e. none of the above

4. Which of the following strategies would be the most effective in moving the market to the socially optimum?
   a. A tax of $10/unit paid by sellers.
   b. A tax of $20/unit paid by sellers.
   c. A subsidy of $10/unit paid to sellers.
   d. A subsidy of $20/unit paid to sellers.
   e. None of the above will correct the externality.
Answer #5 – 7 based on the supply and demand curves at right. The supply and demand curve shown are prior to any government intervention in the market. Assume that $20 in external costs are produced every time a unit of the good is produced, sold, and consumed.

5. To what level of production will unregulated private markets go?
   a. 250       b. 300
   c. 350       d. 400
   e. none of the above

6. What is the socially optimal level of production?
   a. 250       b. 300
   c. 350       d. 400
   e. none of the above

7. Which of the following strategies would be the most effective in moving the market to the socially optimum?
   a. A tax of $10/unit paid by sellers.
   b. A tax of $20/unit paid by sellers.
   c. A subsidy of $10/unit paid to sellers.
   d. A subsidy of $20/unit paid to sellers.
   e. None of the above will correct the externality.

8. Recently (the past few years), an international treaty was signed. This treaty uses tradeable pollution permits. What is this treaty and what is being regulated?
   a. The International Fisheries Treaty. Fishing of large ocean fish (ex. tuna) is being regulated.
   b. The Oaxaca Treaty. Harvesting Humbolt squid in the Gulf of California is being regulated.
   c. The Kyoto Treaty. Emmissions of greenhouse gases are being regulated.
   d. The Tokyo Treaty. Hunting of whales is being regulated.

9. Which of the following is a negative externality?
   a. Alice normally pays Harold $20/day to for book keeping services. Because of new software, Harold can keep Alice’s books in less time. Harold lowers his price.
   b. Bob buys 10 acres of river front property in Dallas and “saves” it from development. Bob opens his property as a park for anyone to enjoy.
   c. Clarence normally goes to Glenda’s donut shop 5 times per week. Glenda raises her prices. Because of this, Clarence only goes to Glenda’s shop 3 times per week.
   d. both b & c
   e. none of the above
10. Which of the following is a positive externality?
   a. Alice normally pays Harold $20/day to for book keeping services. Because of new software, Harold can keep Alice’s books in less time. Harold lowers his price.
   b. Bob buys 10 acres of river front property in Dallas and “saves” it from development. Bob opens his property as a park for anyone to enjoy.
   c. Clarence normally goes to Glenda’s donut shop 5 times per week. Glenda raises her prices. Because of this, Clarence only goes to Glenda’s shop 3 times per week.
   d. both b & c
   e. none of the above

11. Assume the market for 豆 is unregulated. If the production, sale, and consumption of 豆 produces a negative externality:
   a. the private sector will produce more of 豆 than is socially optimal.
   b. the private sector will produce the socially optimal amount of 豆.
   c. the private sector will produce less of 豆 than is socially optimal.
   d. if buyers bear the externality, the private sector will produce the socially optimal amount of 豆. If sellers bears the externality, more than the socially optimal will be produced.
   e. if sellers bear the externality, the private sector will produce the socially optimal amount of 豆. If buyers bears the externality, more than the socially optimal will be produced.

12. Assume the market for 豆 is unregulated. If the production, sale, and consumption of 豆 produces a positive externality:
   a. the private sector will produce more of 豆 than is socially optimal.
   b. the private sector will produce the socially optimal amount of 豆.
   c. the private sector will produce less of 豆 than is socially optimal.
   d. if buyers bear the externality, the private sector will produce the socially optimal amount of 豆. If sellers bears the externality, more than the socially optimal will be produced.
   e. if sellers bear the externality, the private sector will produce the socially optimal amount of 豆. If buyers bears the externality, more than the socially optimal will be produced.

13. The ultimate cause of externalities is:
   a. “human duality”. We care about both ourselves and others. If we only cared about ourselves, no externalities would exist.
   b. information problems. If a person is not aware of the damage he causes others, that person will produce externalities. If he is aware of the damage, no externalities will occur.
   c. that people are greedier and more self-interested about some things than others. Externalities always occur when people act in their own self-interest.
   d. that good property rights do not exist for everything. Externalities seldom exist for resources for which well defined and well enforced property rights.

14. A young child is growing beans in a flower pot. She states; “If I add more seeds, water, & fertilizer, I grow more beans. If I add enough, I can feed the world using this flower pot.” This child is:
   a. incorrect because of negative externalities this will cause.
   b. incorrect because of diminishing returns (decreasing marginal product).
   c. incorrect because of lack of demand for beans.
   d. incorrect because of the law of “spurious versus non-spurious production”.

3
Holy Mackerel! This one’s a bit different. Assume the government of Icthystan has decided to use tradable permits to limit the amount of mackerel fish caught to sustainable levels. The four fishing firms used to catch 200 tons of mackerel per year. It is estimated that 100 tons/year is a sustainable level. The government issues permits for 100 tons of mackerel. Yep! This one’s a bit different.

<table>
<thead>
<tr>
<th>Firm W</th>
<th>Firm X</th>
<th>Firm Y</th>
<th>Firm Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount of Fish normally caught</td>
<td>40 tons</td>
<td>60 tons</td>
<td>40 tons</td>
</tr>
<tr>
<td>Cost of per ton of fish caught ** not an abatement cost! **</td>
<td>$10/ton</td>
<td>$20/ton</td>
<td>$25/ton</td>
</tr>
<tr>
<td>Permits issued</td>
<td>20 tons</td>
<td>30 tons</td>
<td>20 tons</td>
</tr>
</tbody>
</table>

15. If the goal is economy-wide efficiency, which firms should reduce the amount of fish caught? Remember, the goal is to reduce the amount of fish caught by 100 tons.
   a. W & Z should reduce their catch. W should reduce by 40 tons and Z by 60 tons.
   b. X & Z should reduce their catch. X should reduce by 50 tons and Z by 50 tons.
   c. X & Y should reduce their catch. X should reduce by 60 tons and Y by 40 tons.
   d. All firms should cut their catch by 25 tons.
   e. All firms should cut their catch in half. W should reduce by 20 tons, X by 30, Y by 20, and Z by 30 tons.

16. Which firms are the most likely to be a net buyer of permits?
   a. firms W & Z  
   b. firms X & Z  
   c. firms X & Y  
   d. firms W & Y  
   e. None of the above. Each firm will likely keep all the permits issued to it.

17. Which firms are the most likely to be a net seller of permits?
   a. firms W & Z  
   b. firms X & Z  
   c. firms X & Y  
   d. firms W & Y  
   e. None of the above. Each firm will likely keep all the permits issued to it.

18. How efficient will the tradable permit outcome likely be?
   a. It will likely be quite efficient. Each firm will reduce proportionally.
   b. It will likely be quite efficient. The 100 tons of fish will be produced in the least cost way possible.
   c. It will likely be relatively inefficient. Some firms will suffer and some will gain.
   d. It will likely be relatively inefficient. While each firm will pursue it’s privately optimal strategy, they will ignore what is socially optimal.
19. Based on the table at right, which externality problem would be best addressed by taxes?
   a. anapotsis
   b. boobatis
   c. none of the above. A Marshallian solution would be the most effective in both cases.

20. Based on the table at right, which externality problem would be best addressed by direct regulation (command and control)?
   a. anapotsis
   b. boobatis
   c. none of the above. A Marshallian solution would be the most effective in both cases.

21. In the 1950 the Great Plains Water Conservation District was established. The goal was to reduce the amount of water being drained from the underground Ogalla Aquifer. The district mandated that wells had to be a certain distance apart and could only be of a certain size. The amount of water used, however, continued to rise. Municipalities and farms spent more money to drill lots of small spread out wells, and then pump the water great distances back to the farm or city. This is an example of:
   a. a least cost abatement technique.
   b. inefficiencies often associated with direct regulation.
   c. the Coase theorem working as predicted.
   d. a pigouvian production standard.

22. **True (A) or False (B).**
   The curve at right represents a realistic short-run marginal cost curve.

23. **True (A) or False (B).**
   The curve at right represents a realistic short-run marginal cost curve.

24. **True (A) or False (B).**
   The curve at right represents a realistic short-run marginal cost curve.
25. Which of the following best defines the short-run in microeconomics?
   a. any time period less than 12 months
   b. the time period in which a firm’s level of production cannot be changed
   c. the time period it takes markets to generate information needed for perfect decision making
   d. the time period in which a firm has at least one factor of production it cannot changed

26. It’s finally the weekend. You are at a restaurant with the date of your dreams. Which is an example of a variable input (or cost) for the restaurant? **Dropped … Bonus for answer D.**
   a. The prices listed in the restaurant’s menu. These have not changed in 2 years.
   b. workers earning the minimum wage. The restaurant can call in as many or as few as it wants every day, but it has to pay everyone it calls in the minimum wage.
   c. pastries available at a fixed price from a bakery. The restaurant can order in as many or as few as it wants every day, but it has to pay the same price for each one.
   d. both b & c
   e. none of the above

27. You and your dream date are really hitting it off. She/he/it now want to talk about variable inputs and variable costs. Which is an example of a fixed input (or fixed cost) for the restaurant?
   a. The restaurant’s spaghetti dinner. The restaurant produces these itself, and always sells them for $8.00 regardless of the day or time.
   b. workers earning the minimum wage. The restaurant can call in as many or as few as it wants every day, but it has to pay everyone it calls in the minimum wage.
   c. pastries available at a fixed price from a bakery. The restaurant can order in as many or as few as it wants every day, but it has to pay the same price for each one.
   d. both b & c
   e. none of the above

28. Which is the best example of diminishing returns (diminishing marginal product)?
   a. Acme Box Company recently moved from a location with 10,000 ft² to one with 20,000 ft². Its average cost per unit has fallen because it can now use large scale production techniques.
   b. Brenda owns a candle shop. In order to sell more candles, she has to lower price. Beyond some point, cutting price to sell more candles is no longer in her interest.
   c. Cheny owns a Bistor (i.e. restaurant). She recently moved from a location with 3,000 ft² to one with 4,500 ft². Anything bigger and she would have trouble filling it with customers.
   d. Danille owns a dog grooming business. As she takes on more and more customers, she begins to run short of grooming tables, and floor space.
   e. b, c, and d all illustrate diminishing returns (diminishing marginal product).

29. What causes increasing marginal returns (increasing marginal product)?
   a. Suppliers often lower the prices they charge a firm for inputs if the firm buys them in large numbers.
   b. Some tasks require a minimum number of people (or another variable input) to work well.
   c. In the short-run, every firm has limits on its capacity to produce.
   d. Suppliers often raise the prices they charge a firm for inputs if the firm buys them in large numbers.

30. What causes diminishing marginal returns (diminishing marginal product)?
a. Suppliers often lower the prices they charge a firm for inputs if the firm buys them in large numbers.
b. Some tasks require a minimum number of people (or another variable input) to work well.
c. In the short-run, every firm has limits on its capacity to produce.
d. Suppliers often raise the prices they charge a firm for inputs if the firm buys them in large numbers.

31. Assume Heracles can sell all the olive oil he wants to for $8.25 per bottle. Based on the table at right, **how much should Heracles produce if his goal is to maximize profits?** Yikes! There could be more data in there you need.

a. 3 bottles
b. 4 bottles
c. 5 bottles
d. 6 bottles
e. none of the above

<table>
<thead>
<tr>
<th>q (bottle/day)</th>
<th>Quick Ratio</th>
<th>Marginal Costs</th>
<th>Long Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>6</td>
<td>$7</td>
<td>25</td>
</tr>
<tr>
<td>1</td>
<td>5</td>
<td>$6</td>
<td>24</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
<td>$5</td>
<td>22</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>$6</td>
<td>19</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>$7</td>
<td>15</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>$8</td>
<td>10</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>$9</td>
<td>4</td>
</tr>
<tr>
<td>7</td>
<td>7</td>
<td>$10</td>
<td>0</td>
</tr>
</tbody>
</table>

### #’s 32 – 33

Bob is a codfisherman. He estimates the amount of codfish he can catch as a function of how many people he has working his boat. The results are shown at right. Assume labor is his only variable input.

<table>
<thead>
<tr>
<th>Labor Used (L)</th>
<th>lbs/day (q)</th>
<th>MPL</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>N.A.</td>
</tr>
<tr>
<td>1</td>
<td>400</td>
<td>400</td>
</tr>
<tr>
<td>2</td>
<td>1000</td>
<td>600</td>
</tr>
<tr>
<td>3</td>
<td>1500</td>
<td>500</td>
</tr>
<tr>
<td>4</td>
<td>1900</td>
<td>400</td>
</tr>
<tr>
<td>5</td>
<td>2200</td>
<td>300</td>
</tr>
</tbody>
</table>

Increasing MPL means decreasing MC.
Decreasing MPL means increasing MC.

32. Over what range, if any, are diminishing marginal returns (decreasing marginal product) experienced?

a. L = 0 to L = 2 workers
b. L = 0 to L = 4 workers
c. L = 2+ workers and higher
d. L = 4+ workers and higher
e. none of the above, or, more information is needed to answer this

33. Over what range, if any, will Bob experience decreasing marginal costs?

a. L = 0 to L = 2 workers
b. L = 0 to L = 4 workers
c. L = 2+ workers and higher
d. L = 4+ workers and higher
e. none of the above, or, more information is needed to answer this
Answer questions 34 – 40 based on the table at right.

<table>
<thead>
<tr>
<th>Output (q)</th>
<th>TC</th>
<th>TFC</th>
<th>TVC</th>
<th>MC</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>$200</td>
<td>$200</td>
<td>$0</td>
<td>N.A.</td>
</tr>
<tr>
<td>1</td>
<td>$250</td>
<td>$200</td>
<td>$50</td>
<td>$50</td>
</tr>
<tr>
<td>2</td>
<td>$275</td>
<td>$200</td>
<td>$75</td>
<td>$25</td>
</tr>
<tr>
<td>3</td>
<td>$325</td>
<td>$200</td>
<td>$125</td>
<td>$50</td>
</tr>
<tr>
<td>4</td>
<td>$400</td>
<td>$200</td>
<td>$200</td>
<td>$75</td>
</tr>
<tr>
<td>5</td>
<td>$500</td>
<td>$200</td>
<td>$300</td>
<td>$100</td>
</tr>
<tr>
<td>6</td>
<td>$625</td>
<td>$200</td>
<td>$425</td>
<td>$125</td>
</tr>
</tbody>
</table>

34. Is this chart describing long-run or short-run costs? How can you tell?
   a. Long-run costs. TVC is lower than TFC at low levels of production, but above TFC at high levels of production.
   b. Long-run costs. MC initially declines as production increases.
   c. Short-run costs. MC initially declines as production increases.
   d. Short-run costs. TFC is greater than zero.
   e. More information is needed to answer this question.

35. What is the MC of the 4th unit (q = 4)?
   a. $50
   b. $75
   c. $100
   d. $125
   e. none of the above, or more information is needed

36. What is the TVC of the 2nd unit (q = 2)?
   a. $0
   b. $122.5
   c. $200
   d. $550
   e. none of the above, or more information is needed

37. What is the TFC of the 5th unit (q = 5)?
   a. $0
   b. $60
   c. $100
   d. $200
   e. none of the above, or more information is needed

38. What is the TC of the 5th unit (q = 5)?
   a. $60
   b. $200
   c. $500
   d. $1500
   e. none of the above, or more information is needed

39. What is the range, if any, over which this production process exhibits increasing returns (increasing Marginal Product of Labor)? Assume labor is the only variable input.
   a. q = 0 to q = 1 units
   b. q = 0 to q = 2 units
   c. q = 0 to q = 5 units
   d. q = 2+ units and higher
   e. None of the above cover the entire range of increasing returns.

40. What is the range, if any, over which this production process exhibits diminishing returns (declining Marginal Product of Labor)? Assume labor is the only variable input.
   a. q = 0 to q = 1 units
   b. q = 0 to q = 2 units
   c. q = 0 to q = 5 units
   d. q = 2+ units and higher
   e. None of the above cover the entire range of diminishing returns.