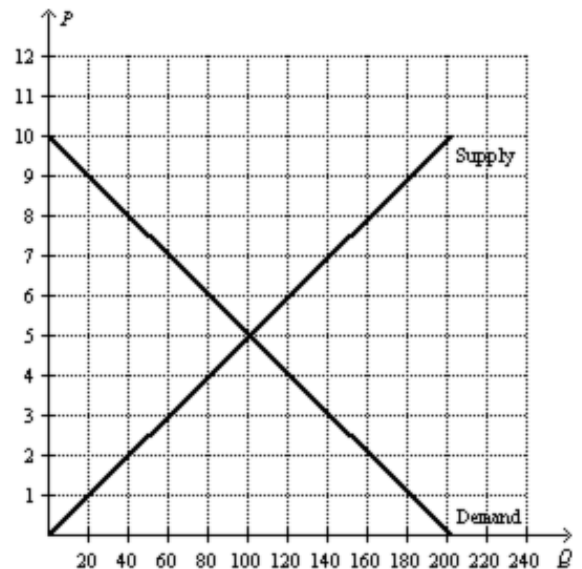


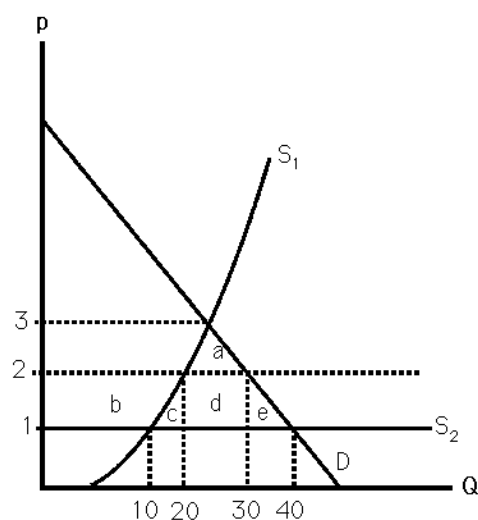
NAME _____

- 5.) Taxes, total surplus and deadweight loss
- a) Suppose the government places a \$4 tax per unit on this good collected by sellers. Shift the appropriate curve on the graph.
 - b) Label the price consumers will pay for the good after the tax is imposed P_{cons} on the graph.
 - c) Label the price firms will receive for the good after the tax is imposed P_{firm} on the graph.
 - d) How much is consumer surplus after the tax is imposed? Label this area on graph.
 - e) How much is producer surplus after the tax is imposed? Label this area on graph.
 - f) How much tax revenue is collected after the tax is imposed? Label this area on graph.
 - g) How much is welfare after the tax is imposed?
 - h) How much is the deadweight loss from this tax? Label this area on right graph.



- 6) Figure at right shows the market for rice in Japan. S_1 represents the domestic supply curve in Japan, and S_2 represents the world supply curve. Price in *dollars* and quantity in *million lbs.*

- What will be the equilibrium quantity and price in Japan with free trade?
- How much rice will Japan produce under free trade?
- How much rice will Japan import under free trade?
- If a \$1 tariff is imposed on imported rice, what will be the new equilibrium quantity and price.
- How much rice will Japan produce under the \$1 tariff?
- How much rice will Japan import under the \$1 tariff?
- Which labeled area(s) represent the amount of tariff Japan would collect under \$1 tariff?
- Which labeled area(s) represent the deadweight loss to Japan under the \$1 tariff?
- Who does the tariff benefit and who is hurt by the tariff?



7.) The inverse demand function (P as a function of Q) for a monopoly's product is $P = 100 - 2Q$, and both MC and AC are constant at 16. There are no fixed costs.

- j) Graph demand, MC , and AC .
- k) Determine the marginal revenue function and draw it on the graph.
- l) Calculate the profit maximizing quantity for the monopolist and identify it on the graph.
- m) Calculate the profit maximizing price for the monopolist and identify it on the graph.
- n) Calculate the profits of the monopolist and identify by an area on the graph.
- o) Calculate the deadweight loss of the monopoly and identify it on the graph.

8) Externalities

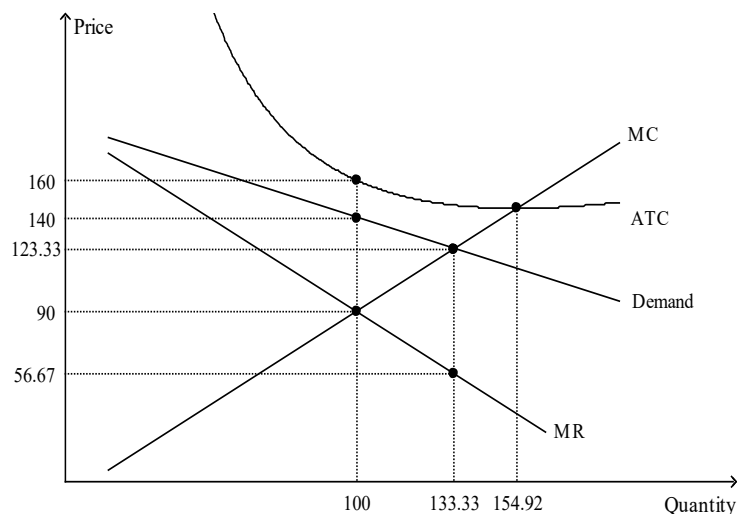
- a) What is a negative externality?
- b) Using pollution as an example, draw the standard diagram where both output and pollution are produced together. Identify demand, marginal private cost, marginal social cost, competitive market price and quantity and optimal price and quantity.
- c) Explain how a tax on pollution damages internalizes the externality in words and with reference to your diagram.
- d) Does the existence of externalities strengthen the argument that society should rely upon Adam Smith's "invisible hand" in free markets, or does it weaken that argument? Explain.
- e) Why is the optimal amount of pollution in general greater than zero. Explain in terms of the opportunity cost of perfectly clean air.

9) Public goods are non-excludable and non-rivalrous

- a) Explain what *non-excludable* means. Using examples, compare public and private goods in your explanation.
- b) Explain what *non-rivalrous* means. Using examples, compare public and private goods in your explanation.
- c) Under perfect competition conditions, free markets will provide the optimal amount of private goods (Adam Smith's invisible hand). Will free markets provide the optimal amount of public goods? Explain why or why not.

10) Monopolistic Competition

- In what way are monopolistically competitive firms like perfectly competitive firms?
- In what way are monopolistically competitive firms like monopolies?
- Refer to the diagram of a monopolistically competitive firm's costs and revenues on the right. Is the firm in the diagram at long-run equilibrium? Explain.
- Will firms enter or exit this industry in the long run? Explain.
- Assume this firm stays in the industry and other firms adjust as in part (d). What will change in this diagram to return this firm to long-run equilibrium?



11) Game theory →

- Does Firm A have a dominant strategy? Explain how you determined this.
- Does Firm B have a dominant strategy? Explain how you determined this.
- Is there a Nash Equilibrium in this game? If so, what is it? Explain how you determined whether there is a Nash Equilibrium.

Payoff
Matrix
(A, B)

Firm A

Firm B

		Firm B	
		low price	high price
Firm A	low price	5, 4	9, 2
	high price	2, 5	7, 6