CONCORDIA COLLEGE
MOORHEAD, MINNESOTA

- Name: _____
- Date: _____
- Section: _____

BUS 201: Principles of Global Economics

Problem Set #4: Suggested Solutions

Fall 2025

INSTRUCTIONS:

- Write your full name, date, and section clearly at the top of the first page.
- This problem set is designed as a check-in assignment to help you practice the core ideas. It is not intended to be difficult, but you are expected to think carefully about your answers.
- For multiple-choice problems, circle the best answer.
- For short-answer problems, limit your response to no more than 4 sentences. Be concise but complete, and use economic reasoning in your answers.
- You may use your textbook, lecture slides, and personal notes.

Problem 1. Multiple Choice

1.A. An externality is best described as:

a) A cost or benefit that affects only buyers and sellers directly involved in a market.
b) A tax paid by firms to the government.
c) The uncompensated impact of one person's actions on the well-being of a bystander.
d) Any change in supply or demand caused by a change in price.

1.B. In a market with a negative externality, such as pollution from a factory, which of the following is true?

a) The private cost of production equals the social cost of production.
b) The social cost of production is greater than the private cost of production.
c) The social cost of production is less than the private cost of production.
d) There is no deadweight loss in equilibrium.

1.C. When there is a negative externality in production and the market is left unregulated, the market equilibrium quantity is:

a) Greater than the socially optimal quantity.
b) Equal to the socially optimal quantity.
c) Less than the socially optimal quantity.
d) Unrelated to any notion of social welfare.

1.D. A corrective (Pigouvian) tax on a polluting good is designed to:

a) Increase output so that more consumers can enjoy the good.
b) Shift the demand curve to the right.
c) Align the private marginal cost with the social marginal cost.
d) Eliminate all production of the good.

1.E. A good such as a flu vaccination that generates benefits for both the vaccinated person and those around them is an example of:

a) A negative externality.
b) A positive externality.
c) A common resource.
d) A purely private good.

Problem 1. Multiple Choice (continued)

1.F. Tradable pollution permits (a cap-and-trade system):

a) Fix the tax per unit of pollution and allow quantity to adjust freely.

b) Set a total quantity of allowable pollution and let the permit price be determined in the market.

c) Always cost more for firms than corrective taxes.

d) Eliminate any incentive for firms to lower their emissions.

1.G. A public good is defined as a good that is:

a) Excludable and rival in consumption.

b) Excludable and non-rival in consumption.

c) Non-excludable and rival in consumption.

d) Non-excludable and non-rival in consumption.

1.H. Which of the following best describes the free rider problem?

a) Consumers refrain from buying a good because its price is too high.

b) Individuals enjoy the benefits of a good without contributing to its cost.

c) Firms exit a market when profits are negative.

d) Governments refuse to provide any public goods.

1.I. A congested toll-free road during rush hour is best classified as:

a) A private good.

b) A public good.

c) A common resource.

d) A club good (artificially scarce good).

1.J. Which statement correctly connects externalities, public goods, and common resources?

a) Public goods and common resources both create positive externalities that lead to underuse.

b) Public goods often involve positive externalities, while common resources often involve negative externalities from overuse.

c) Both public goods and common resources are excludable, so there are no externalities.

d) Externalities occur only when a good is rival in consumption.

Problem 2. True / False

Determine whether each statement is `TRUE` or `FALSE`. If you deem that the statement is `FALSE`, you MUST justify your verdict by providing a brief explanation.

2.A. If an activity generates a positive externality, the market equilibrium quantity is lower than the socially efficient quantity.

- `TRUE`

2.B. National defense is usually considered a public good because it is both non-excludable and non-rival in consumption.

- `TRUE`

2.C. A congested toll-free highway is an example of a public good, since anyone can use it and one more user does not affect others.

- `FALSE`
- A congested toll-free highway is rival in consumption because one more driver slows others down. It is a common resource, not a public good.

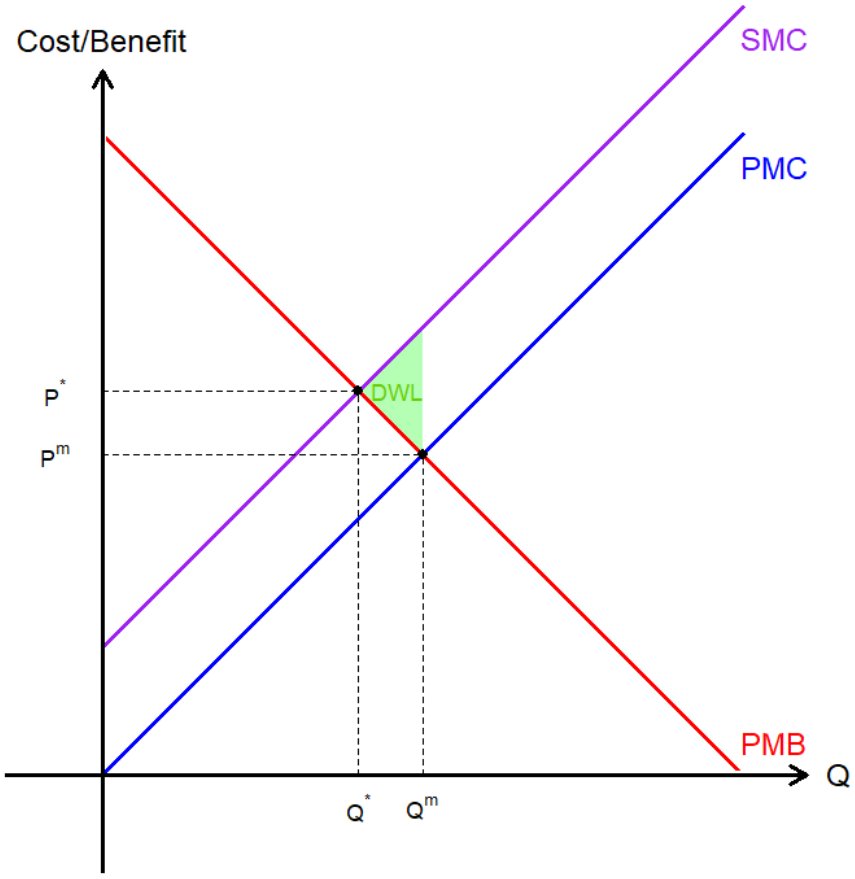
2.D. When a fishery in international waters is left unregulated, each individual fisher fully takes into account how their own catch affects the availability of fish for others.

- `FALSE`
- Individual fishers do not consider the effect of their catch on the fish population for everyone else. This leads to overuse of the resource.

Problem 3. Short Answer

3.A. Using a properly labeled supply-and-demand diagram, illustrate a market with a negative externality in production (for example, pollution from a factory). On your diagram, clearly label:

- The demand curve (PMB),
- The private marginal cost curve (PMC),
- The social marginal cost curve (SMC),
- The market equilibrium quantity (Q^m) and price (P^m),
- The socially optimal quantity (Q^*) and price (P^*),
- The deadweight loss caused by the negative externality.



Problem 3. Short Answer

3.B. Suppose the local government is deciding how to reduce air pollution from a group of factories. Compare a command-and-control policy (for example, requiring a specific technology on smokestacks) with a corrective tax on each unit of pollution. Describe one advantage and one disadvantage of each approach.

- Command-and-control:
  - Advantage: Simple to understand and enforce, since the government can require a specific technology or limit.
  - Disadvantage: It does not give firms an incentive to reduce pollution beyond the requirement, and it may be costly if firms have different abatement costs.
- Corrective Tax:
  - Advantage: Encourages firms to reduce pollution in the cheapest ways available and rewards firms with low abatement costs.
  - Disadvantage: Requires the government to estimate the correct tax rate, which can be difficult in practice.

3.C. Two towns are considering building a non-toll highway that connects them. Each resident values the highway at $500. There are 1,000 residents in total, and the cost of building the highway is $400,000. Explain:

- Whether the highway is socially desirable,
- Why voluntary contributions might fail to raise enough funds, and
- How the government could use a tax to solve the problem.

- The highway is socially desirable because total benefits exceed the cost.
- Voluntary contributions fail because the highway is non-excludable, so people have an incentive to free ride and hope others will pay.
- A 100 tax on each resident raises exactly the missing 100,000, allowing the highway to be built.

Problem 3. Short Answer

3.D. Consider a local lake that is open to the public for fishing. Explain how this situation illustrates the Tragedy of the Commons. Then describe one policy that could help move the outcome closer to the social optimum (for example, a quota, a tax, tradable permits, or assignment of property rights).

- A lake with open access is a common resource because it is non-excludable and rival. Individual fishers take into account only their own benefit from catching fish, not the external cost created by reducing the fish stock for others. This leads to overfishing relative to the social optimum.
- A command-and-control policy would place a direct limit on the number of fish each person is allowed to catch. For example, the government could set a daily quota or limit the fishing season. This reduces overfishing by restricting access and directly controlling the total amount removed from the lake.
- A corrective tax would charge fishers a fee for each fish they catch. This raises the private cost of fishing so that it reflects the social cost of depleting the resource. When fishers face a higher cost per catch, they reduce effort, which moves the quantity of fishing closer to the social optimum.
- A cap-and-trade system would set a fixed total number of fishing permits equal to the socially optimal catch for the lake. Each permit allows the holder to catch one fish. Fishers who value fishing more can buy permits from those who value fishing less, which ensures that the resource is allocated to those with the highest willingness to pay. Because the total number of permits is capped, the overall catch is limited to a sustainable level.
- A Coasean solution would require clear property rights. For example, the town could assign ownership of the lake to a cooperative formed by residents. Members of the cooperative would negotiate rules and limits that balance total fishing with long-run sustainability. Since members internalize the social cost of overfishing, they have an incentive to restrict catch to the efficient level.

- Original Score: _____
- Recovered Score: _____
- Original Date: _____
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