

MICROECONOMICS, COMMON PROPERTY, FINAL EXAM PRACTICE PROBLEMS

(The attached PDF file has better formatting.)

*Question 1.1: Common Property

If use of common property is unrestricted, people increase their use as long as their marginal cost is smaller than

- A. The social marginal benefit of the common property
- B. The competitive entrance fee that a private owner would charge
- C. The monopolistic entrance fee that a monopolist would charge
- D. The rent created by the common property
- E. The value they receive from using the common property

Answer 1.1: E

Private marginal value equals *private* marginal cost. This is the problem with common property; social benefits and costs are not considered.

*Question 1.2: Common Property

Which of the following is the best example of common property?

- A. A research library at the Vatican open to all scholars of medieval Catholic history.
- B. Police protection in a gated community.
- C. An internet discussion forum open to all actuarial candidates.
- D. Subsidized actuarial malpractice insurance policies provided by the SOA.
- E. A beach that is open to all bathers.

Answer 1.2: E

Jacob: Why isn't Choice A also correct? The library is open to all scholars, just like the beach is open to all bathers.

Rachel: The value of common property is reduced by over-crowding, because there are more potential users than the property can handle. Hundreds of millions of people live near the coasts of North America, Europe, and Asia. Free public beaches often have tens of thousands of bathers per square mile. They are so crowded that no one has much fun.

There are only a few scholars of medieval Catholic history in the world who make the trip to Italy to use the research facilities at the Vatican. These scholars are not worried about over-crowding at the library; they want someone to talk to about their research.

Jacob: How about the discussion forum in Choice C?

Rachel: Actuarial candidates gain by reading the postings of other candidates, and no one avoids the discussion forum because it is too crowded.

Beaches are common property: more consumers cause each one to get less benefit.

*Question 1.3: Economic Rent

When will a property create zero economic rent?

- A. When the property has a private owner who charges a monopoly entrance fee.
- B. When the property has a private owner who charges a competitive entrance fee.
- C. When the property is commonly owned and the opportunity cost of using it is the same for everyone.
- D. When the property is commonly owned and the opportunity cost of using it differs by user.
- E. When the property has a private owner and the government charges an excise tax equal to the difference between the competitive entrance fee and the monopolistic entrance fee.

Answer 1.3: C

If the cost of using the property differs by user, only some persons use the property, so some economic rent remains.

*Question 1.4: Public Beach

Suppose 10,000 citizens want to use a public beach. The value of the beach for each person is $\$10 \text{ minus } 0.1\% \times \text{the number of visitors on the beach}$. The citizens have nothing else to do with their time, so their time has a value of zero.

If the beach costs \$10,000 to operate and charges a \$5 admission fee, what is the social value of the pool?

- A. $-\$10,000$
- B. $-\$9,000$
- C. $\$9,000$
- D. $\$15,000$
- E. $\$25,000$

Answer 1.4: D

We determine how many visitors use the beach as

$$\begin{aligned} \$10 - 0.1\% \times \text{number of visitors} &= \$5 \Rightarrow \\ \text{number of visitors} &= (\$10 - \$5) / 0.1\% = 5,000. \end{aligned}$$

The social value is the entrance fees minus the costs: $5,000 \times \$5 - \$10,000 = \$15,000$.

*Question 1.5: Opportunity Costs

A small library is open to all members of the public with no entrance fee, so it is a common property. The library is not a circulating library, so visitors must read the books on the premises. The members of the public differ greatly in their reading habits: some read much, some read little, and some are illiterate. The social gain created by the library is

- A. As large as possible: no entrance fee would increase the social gain
- B. Positive, but less than the maximum possible: an entrance fee increase the social gain
- C. Equal to the difference between each person's average benefit from reading and the marginal benefit
- D. Zero: the entire social gain is dissipated by the common property
- E. Less than the social gain if all members of the public have the same opportunity costs

Answer 1.5: B

Since the readers have different opportunity costs, some readers still gain social benefits when no more readers use the library.

*Question 1.6: Common Property and Social Welfare

A town owns three beaches for which it does not charge an entrance fee. All residents of the town have equal utility from using the beaches. To raise revenue, the town auctions the beaches to the highest bidders. Two scenarios are possible:

- Scenario 1: The beaches are bought by different persons, who charge a competitive entrance fee.
- Scenario 2: All three beaches are bought by the same person, who charges a monopolistic entrance fee.

What is the effect on social welfare?

- A. Social welfare increases in scenario 1 but does not change in scenario 2.
- B. Social welfare does not change in scenario 1 but decreases in scenario 2.
- C. Social welfare increases in both scenario 1 and scenario 2.
- D. Social welfare decreases in both scenario 1 and scenario 2.

E. Social welfare does not change in scenario 1 but may increase or decrease in scenario 2.

Answer 1.6: C

The social gain is greater in Scenario 1, since monopoly causes a dead weight loss. But even monopoly is better than the complete loss from common property.

*Question 1.7: Common Property

Which of the following is *not* an example of common property?

- A. A lake that residents freely use to catch fish.
- B. A forest that is open to any loggers who wish to use it.
- C. A grassland that all members of a tribe use for grazing.
- D. A satellite transmission that can be received by anyone who has a satellite dish.
- E. A beach that is open to all bathers.

Answer 1.7: D

No one's utility is reduced if others receive the satellite transmission. The good is non-rivalrous; it is not common property. There is no dissipation of rents or tragedy of the commons; more satellite dishes *increase* social utility (except perhaps for the aesthetics of satellite dishes on roofs).

*Question 1.8: Nonexcludable and Nonrivalrous

Which of the following is the best example of a public good that is both nonexcludable and nonrivalrous?

- A. The Mona Lisa
- B. Municipal firefighting services
- C. Computer software
- D. Fish in the ocean
- E. National defense

Answer 1.8: E

- Fishing rights are rivalrous; if one person catches the fish, others can't.
- Painting, software, and municipal services are excludable. The fire department may only fight fires on homes that have paid a municipal fire-fighting tax. Paintings and software can be restricted to paying customers.

*Question 1.9: Private Provision of Public Goods

An independence day celebration is worth \$10 to each of 10,000 residents of a town. The celebration costs \$70,000. A civic group plans to raise the funds for the celebration by asking each resident for a contribution of \$8. This plan is unlikely to succeed because

- A. The social value of the celebration is less than its cost.
- B. The celebration is a rivalrous good.
- C. Each resident has the incentive to free ride.
- D. People would be willing to contribute \$7 but not \$8 each.
- E. Poor residents would view the contribution as a regressive tax, since the same amount is charged to each resident.

Answer 1.9: C

Voluntary payments for public goods don't work because each person has an incentive not to pay but still receive the benefits from the good. In contrast, voluntary payments are used to buy private goods.

*Question 1.10: Common Property and Social Welfare

A municipality owns common property for which it does not charge an entrance fee. If the municipality privatizes the property in a competitive auction, what is the effect on social welfare?

- A. Social welfare increases.
- B. Social welfare decreases.
- C. Social welfare does not change.
- D. Social welfare increases if the new owner of the property charges a competitive entrance fee and decreases if the new owner charges a monopolistic entrance fee.
- E. Social welfare does not change if the new owner of the property charges a competitive entrance fee and decreases if the new owner charges a monopolistic entrance fee.

Answer 1.10: A

*Question 1.11: Common Property and Social Welfare

A municipality owns common property for which it does not charge an entrance fee. If the municipality privatizes the property in a competitive auction, what is the effect on social welfare?

- A. Social welfare increases, and there is a wealth transfer from taxpayers to the new owner.
- B. Social welfare increases, and there is a wealth transfer from the new owner to taxpayers.
- C. Social welfare increases, and there is no wealth transfer.
- D. Social welfare does not change, but there is a wealth transfer from taxpayers to the new owner.
- E. Social welfare does not change, but there is a wealth transfer from the new owner to taxpayers.

Answer 1.11: C