

AAE / ECON / Env. St. 343 Review for Exam #1

To be successful in exam #1 you should understand the following concepts:

- Efficiency: An allocation of resources is efficient if it is not possible to reallocate resources without making at least one person worse off.
 - Welfare Theorem: A competitive market leads to an efficient allocation of resources provided the following assumptions hold:
 1. Property rights must be well-defined (i. comprehensive, ii. excludable, iii. transferable, iv. secure)
 2. Perfect information between agents.
 - In this class we are mostly concerned with how property rights affect efficiency.
 - How to determine in practice if an allocation of resources is efficient?
Two ways:
 - Consider if the property rights to the resource have the four characteristics of a well-defined system of property rights. If not then the welfare theorem won't hold.
 - If I give you numerical values and an allocation of a resource, simply consider whether there is another allocation which makes at least one party better off and nobody else worse off.
- Property rights and incentives
 - Property rights give rise to incentives.
 - How to determine incentives?
 - First, write down who has the property right to the resource. With the information given to you in the problem you have to make some reasonable assumptions as to the nature of the property right.
 - Second, ask yourself questions. Think primarily about what you would do if you were faced with such a property rights system.
- Market Failure
 - You should understand the terminology under market failure:
 - Externalities
 - Public bads.
 - Public goods
 - Free riding
 - Market failure occurs when the welfare theorem doesn't hold and the allocation of resources is not efficient. How to determine this?
 - The welfare theorem doesn't hold when property rights are not well-defined.
 - If you argue that property rights are not well-defined, you must justify.
- Solutions to market failure
 - You should understand the major policy instruments to correct market failure:
 - Command and control (CAC) (i.e. pollution standards)
 - Coase Theorem

- Green taxes
 - Subsidies
 - Tradable permits
 - How do each of the above policy instruments allocate the property right to the use of the environment?
 - Do each of the above policy instruments lead to an efficient correction of market failure?
 - What are some general advantages and disadvantages of the policy instruments?
 - You should be comfortable with using the following tools:
 - Table representation of marginal abatement costs and marginal pollution damages.
 - Table representation of two firms with different marginal abatement costs.
 - Graphical representation of marginal abatement costs and marginal pollution damages.
 - Graphical representation of two firms with different marginal abatement costs and an aggregate marginal abatement cost curve.
 - Simple mathematical representations (e.g. $MAC = \$10q_1$, etc.)
- Common property and open access
 - What are the incentives with open access resources?
 - Why are open access resources inefficiently exploited?
 - What externalities are associated with open access exploitation?
 - The basic economics of ITQ programs.
- Case studies presented in class
 - You do not have to know specific details regarding the case studies presented in class (e.g. the year the CAFÉ standards were enacted).
 - You should be familiar with the economic insights from the case studies.