Practice Final #3 (that Prof. Fung emailed)

Multiple Choice

1. B

2. D

3. D

4. B

5. C

6. D

7. B

8. D

9. D

10. D

11. D

12. B

13. D

14. A

15. E

16. D

17. D

18. D

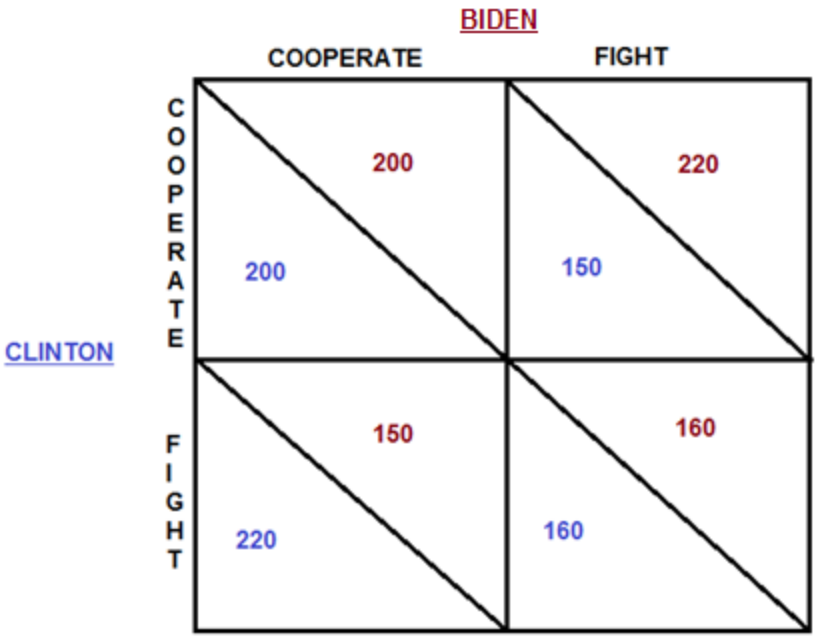
19. D

20. D

Short Answer

Short Answer Questions

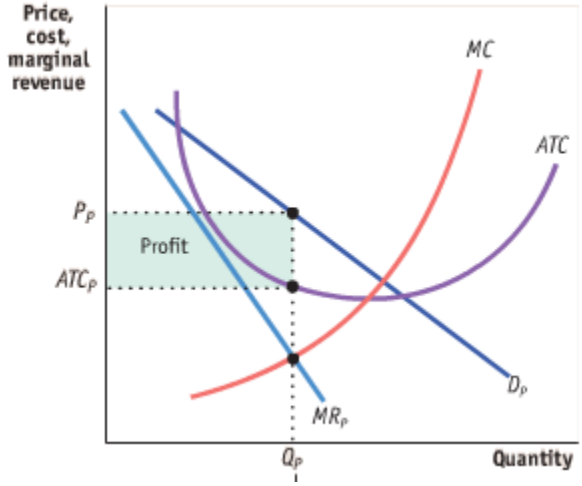
1. Prisoner's Dilemma



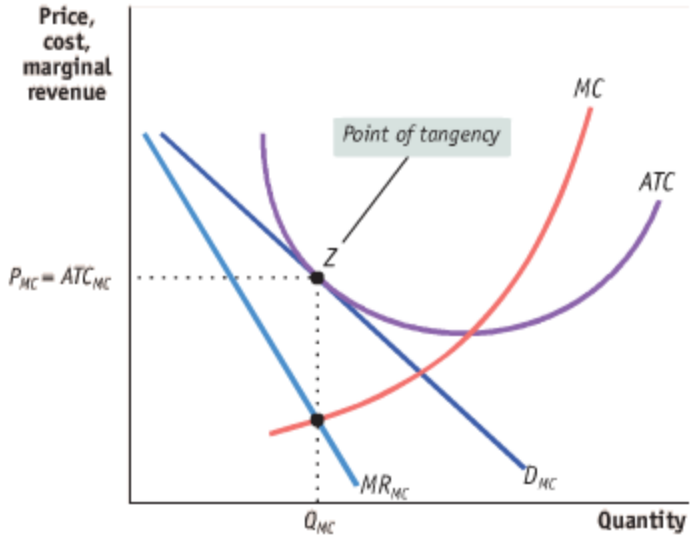

The (Nash) equilibrium will be fight-fight. The dominant strategy is fight because, regardless of what the other player does, the payoff is always higher for fight.

2. Monopolistically Competitive Firm

a) In the short-run (earning positive economic profits):

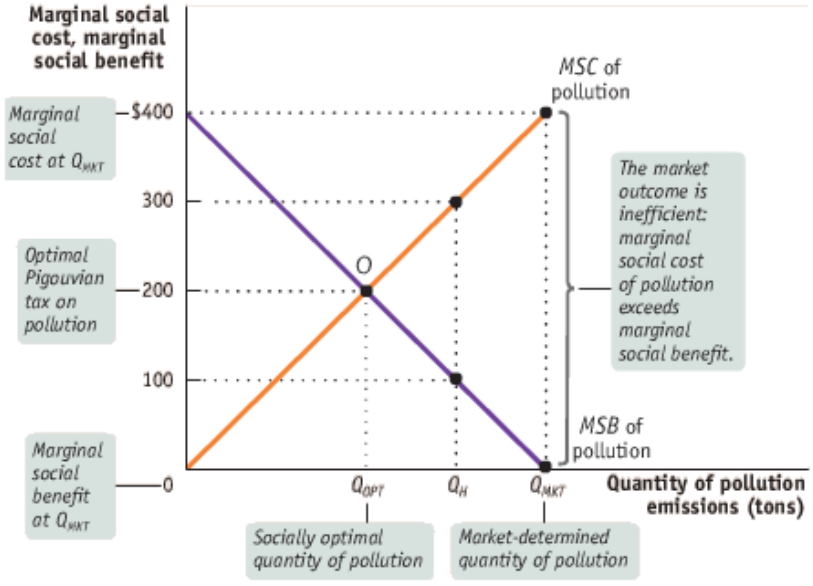



b. In the long-run:




Profits are zero in the long-run. There is excess capacity because at the long-run outcome, ATC is not minimized by the monopolistically competitive firm.

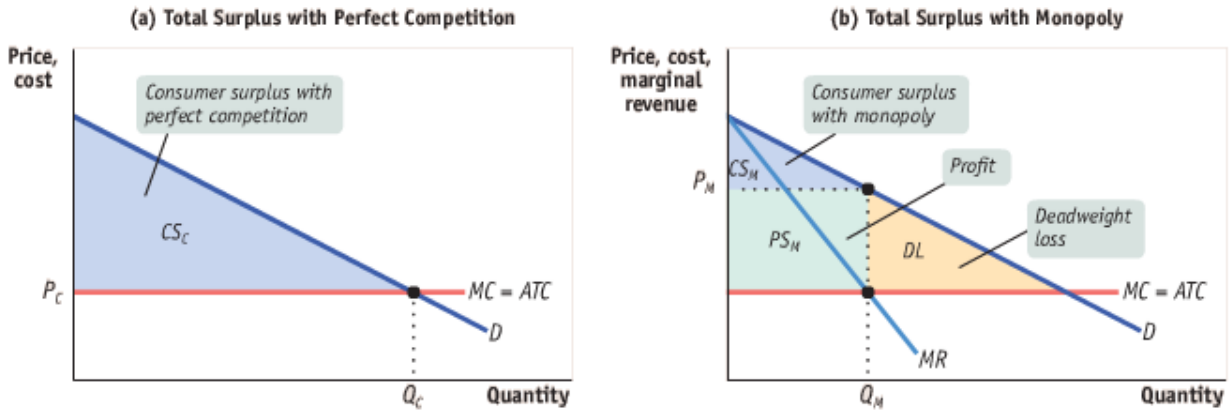
3. The Social Optimal Quantity of Pollution




The polluter will pollute until the marginal benefit of pollution (i.e., the cost savings from being able to pollute, given by the MSB curve) is equal to the private marginal cost of pollution. In the absence of government intervention, it is costless to pollute; that is, private MC of pollution is zero. Thus, the polluter will pollute until MSB = 0 at $Q_{MKT}$. However, at this quantity the marginal *social* cost of pollution is greater than the marginal social benefit. That is, from society's point of view, there is too much pollution.

The socially optimal quantity of pollution, $Q_{OPT}$, is achieved when MSC = MSB (where the two curves intersect). To reduce pollution from the market outcome to the socially optimal level, the government could levy a pollution tax equal to $200/unit of pollution (the price given associated with the optimal quantity of pollution). This increases the private marginal cost of pollution to $200 and induces polluters to pollute only $Q_{OPT}$ units of pollution.

4. Monopoly versus Perfect Competition



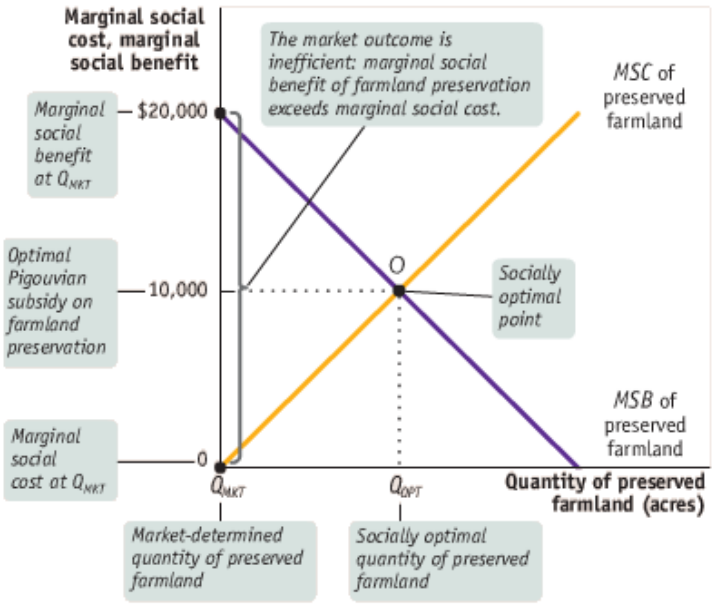

Total surplus is higher in perfect competition compared to monopoly. Economists view monopolies unfavorably because monopolists reduce quantity below the social optimum in order to raise price and profits. This results in lost mutually beneficial transactions and results in deadweight loss.

5. Types of externalities

a. Positive externalities are when the consumption/production of a good generates external benefits (a benefit that goes to others without the original producer/consumer receiving any compensation). Negative externalities are when the consumption/production of a good generates external costs (an uncompensated cost that the consumer/producer imposes on others). Network externalities are goods where the value of a good/service to an individual increases if more people use the good/service. Goods characterized by network externalities tend to exhibit positive feedback (where success breeds more success, and failure begets more failure).

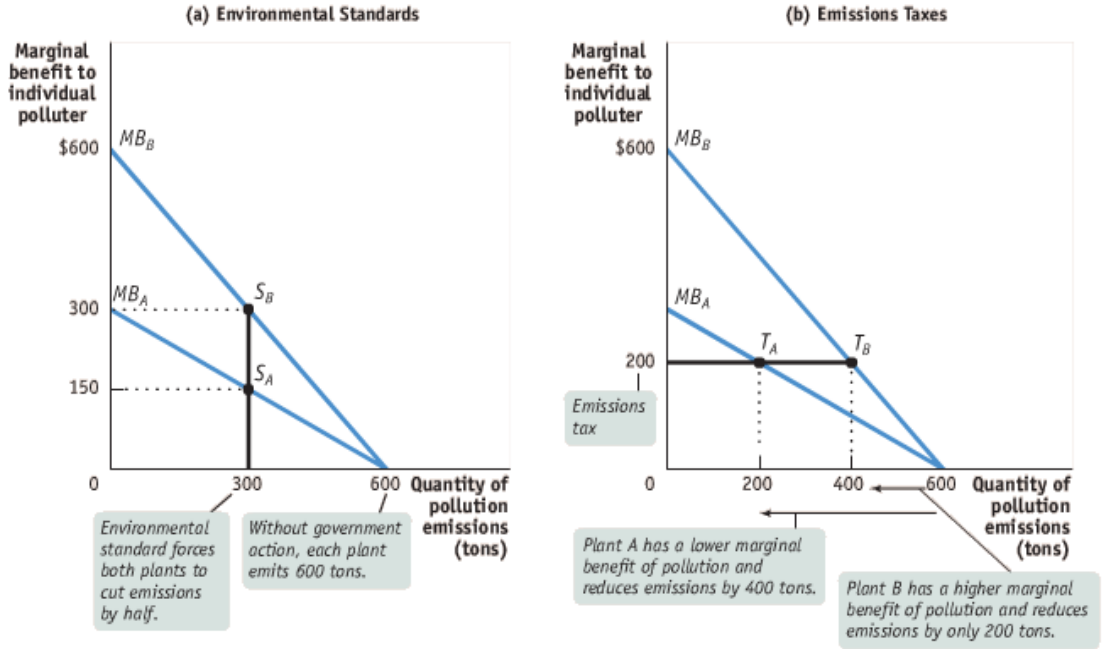
b. Network externalities do not inherently lead to inefficiencies. Positive and negative externalities may lead to too little of a good (in the case of positive externalities) or too much of a good (in the case of negative externalities) to be produced. However, per the Coase theorem, if transaction costs are sufficiently low and property rights are well defined, private parties may be able to bargain with each other and the social optimal level can be achieved. If transactions costs are too high (or property rights are not well defined) private bargaining may break down and (in the absence of government intervention) inefficiencies will result.

c. Consider the case of farmland preservation:




Farmers will preserve farmland until the marginal cost of doing so (given by the MSC) is equal to their private marginal benefit. In the absence of government intervention, the private marginal benefit of preserving farmland is zero; thus, farmers preserve farmland until MSC = 0 at $Q_{MKT}$. The socially optimal quantity, however, is given where MSC = MSB at $Q_{OPT}$. To induce farmers to preserve $Q_{OPT}$ units of farmland, the government could give a Pigouvian subsidy equal to $10,000 per unit preserved (the price associated with the socially optimal quantity). This raises the private marginal benefit of preserving farmland to $10,000 and induces farmers to preserve $Q_{OPT}$ acres of farmland.

6. Uniform Standards, Pigouvian Taxes and Cap and Trade



The emissions tax is more efficient than the environmental standard because it achieves the same amount of pollution reduce (600 units total) at a cheaper cost. Under the uniform standard, $MB_B > MB_A$ which implies it is more expensive for firm B to reduce pollution to this level than for firm A. We can reduce the total cost of pollution reduction by allowing B to pollute more and instead having A pollute less. Under the emissions tax, the MB to both A and B is same (and is equal to the tax). There is no way to rearrange abatement to reduce the cost of reducing pollution. The socially optimal quantity of pollution can also be achieve via a cap and trade (permit) system. If the government gives both plants 300 permits that they can they buy and sell amongst each other, the outcome depicted in panel b will ensue. However, with a permit system, $200 will end up being the price of a permit (instead of the level of the tax).