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Principles of Economics

Study Questions – Resources, and Government & Efficiency

1. Explain in 1 sentence each whether or not each of the following is a public good:
- The Houston Public Library
 - Sunlight
 - A Bridge
 - Sneakers
2. Recently, the brilliant actor Stephen Seagal (star of such film classics as "Hard to Kill" and "Fists of Fury") stated that **NO** new car model should be introduced into the economy unless it emits **zero** pollutants.

Does Mr. Seagal's belief make sense? Explain in a sentence or two.

3. Ace Tomato Farm can sell tomatoes for \$10 per bushel. It can hire workers for \$29.99 per worker per day. Here is the marginal product of labor:

# of workers	1	2	3	4	5	6	7	8	9

Marginal prod (bushels)	10	9	8	7	6	5	4	3	2

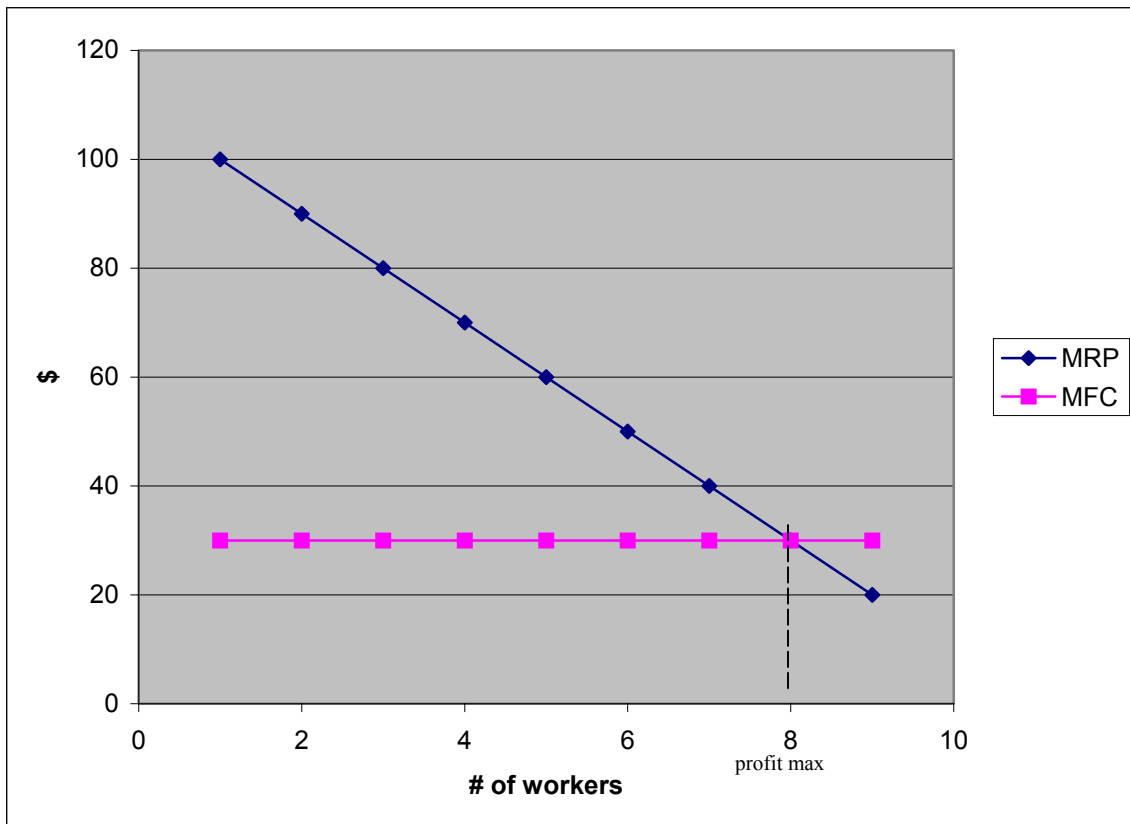
- Graph this firm's marginal revenue product and marginal factor (resource) cost curves.
- Using profit maximizing rule #2, how many workers should Ace hire? Illustrate this number on your graph.
- Now low tomato demand drops tomato prices to \$5 per bushel.
 --How many workers should Ace hire now? Show the new number on your graph.
- Suppose that tomato prices remain at \$10 per bushel, but that wages rise to \$39.99 per worker per day. How many workers will Ace hire now?

4. On Saturday morning it would cost me \$3.75 to travel the Sam Houston Tollway from Highway 249 to U.S. 59. Is this the socially efficient price? If so, then explain why. If not, then precisely how much should I be charged to satisfy the social efficiency rule? Explain your answer.

1.
 - A) No. It is easily excludable, so it violates the non-excludable attribute of a public good.
 - B) Yes. It is both non-rival and non-excludable.
 - C) Probably not. If it is easily excludable, then it violates the non-excludable attribute of a public good.
 - D) No. These are neither non-rival nor non-excludable.

2.
 He is incorrect. Suppose, for example, a new engine is developed that costs the same as current engines to build, increases gas mileage of the typical car by 400%, but still emits a little bit of pollution. Seagal would not allow this engine to be used. The guy ain't too smart. (But what a great actor!) Remember: the best level of pollution is NOT 0%, unless you believe that human beings should vanish entirely from the Earth.

3.a)



b) 8 workers, since that's where MRP and MFC are (nearly) equal.

c) 7 workers, since that's where MRP and the new higher MFC are (nearly) equal.

4. Social efficiency requires that price = marginal cost. So I should be charged a toll that equals the cost that is imposed on the tollway by me driving my car on it. Assuming that I don't crash the car or spill anything nasty on the road, the cost that I will impose on the toll by driving on it is near \$0. So the efficient toll is a toll of around \$0.

Why doesn't the government charge a zero toll, then? Because they are attempting to raise toll revenue—not to achieve the socially efficient result. Remember: social efficiency is NOT a goal of producers; their goal is profit-maximization!