

ECO 150, Winter 2022, Practice Exam #1

Instructions

1. This exam consists of thirteen questions. Answer them all. You are encouraged to use the models from class (especially supply and demand) when formulating your answers.
2. Some questions are open ended. You will be graded more on the quality of your explanation than your specific answers. On “true/false” questions, for example, answering only “true” or “false” will receive no credit, even if correct.
3. Do not just copy from the course materials. Doing so will receive no credit.
4. This is an open note exam. You may use your notes, the textbook, and all course materials from the website. You may use electronic versions of these materials as well. You may not, however, use other materials, access the internet for any reason besides obtaining the allowed materials, or solicit help from any other person while taking this exam.

Please sign the following statement:

In completing this exam, I did not access any online resources besides the approved course materials, the textbook, and my own notes, nor did I communicate with any other student or person about this exam. I understand that doing so would be a violation of the Student Conduct Policy.

Sign: 

Printed Name: *Dr. Hugh Mann*

1. How does scarcity apply to the Aral Sea disaster discussed in class?

The water from the rivers feeding the sea is scarce. There is not enough to meet the cotton farmers' demand and preserve the water level of the sea.

2. The Federal Reserve is considering raising interest rates. What tradeoffs are involved with its decision?

The cost of higher interest rates is that they will make it more expensive to borrow, raising the effective cost of things that are financed: cars, homes, etc.

The benefit is that they will also reduce inflation, which remains alarmingly high.

3. How would a distortionary tax on gasoline affect the incentives of consumers?

Because gasoline is not completely elastic, consumers will pay at least some of a gasoline tax, regardless of whether it is imposed on them or producers.

This will reduce their demand and provide incentives to switch to more fuel efficient methods of travel, take shorter trips, etc.

Consider the market for Pringles. Assume that both firms and households are price takers and that they have full information.

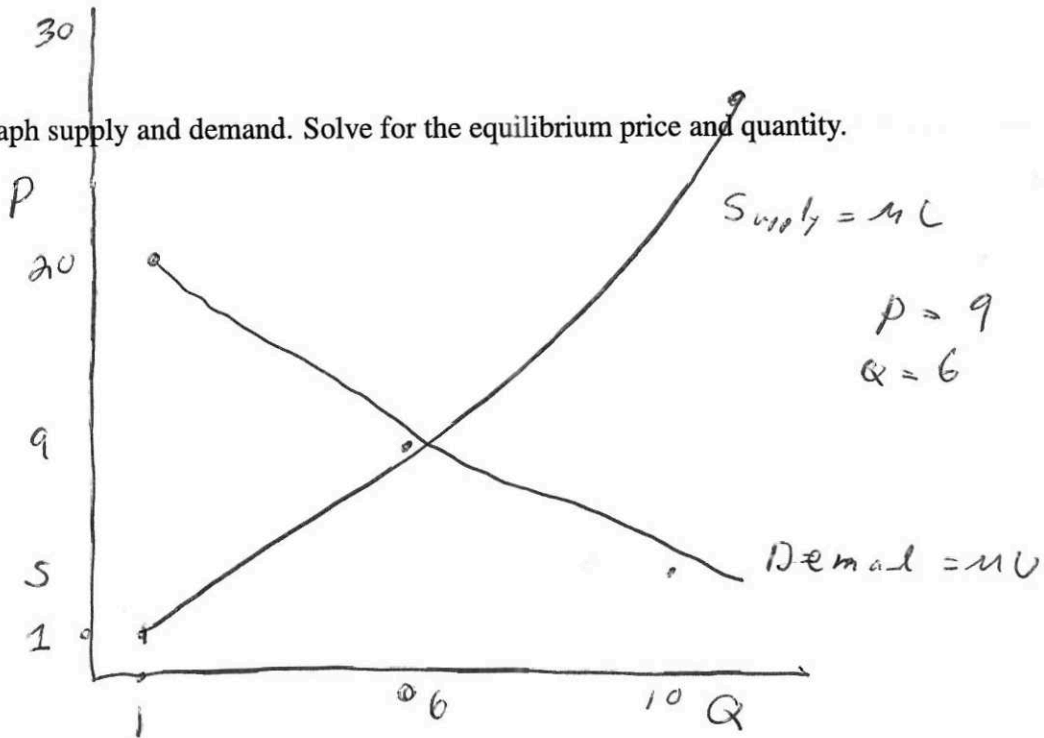
Table 1: Market for Pringles

Units	Marginal Utility	Marginal Cost
1	20	1
2	18	2
3	16	3
4	14	5
5	10	7
6	9	9
7	8	11
8	7	15
9	6	20
10	5	30

4. Suppose that firms also have a fixed cost (possibly due to a fixed capital stock). Explain why this affects neither the demand nor supply curves.

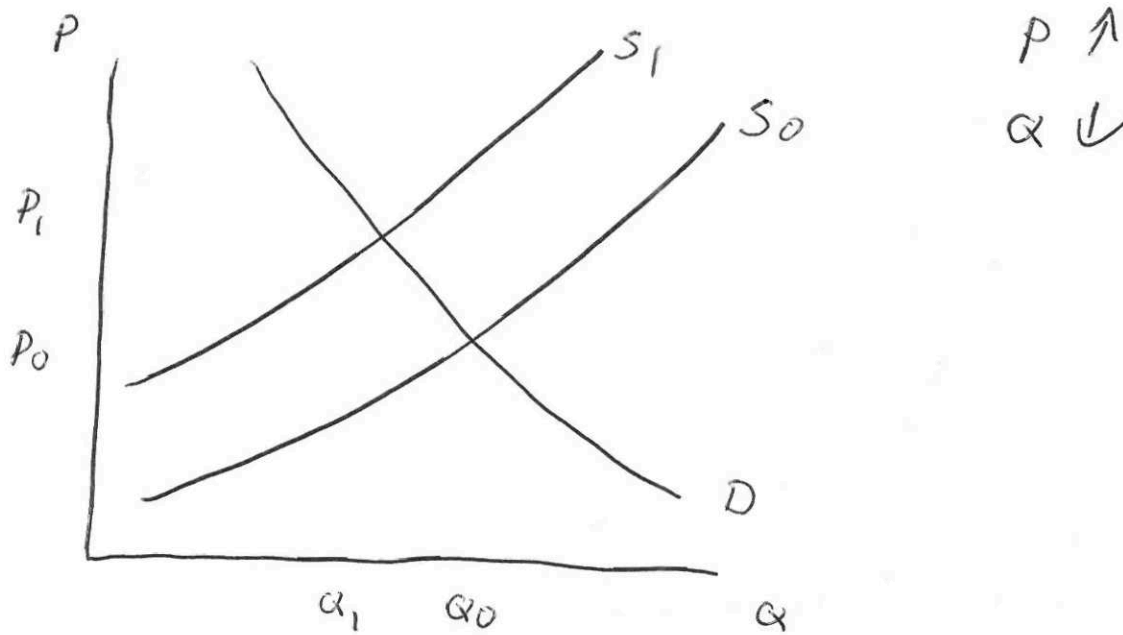
Fixed costs do not affect marginal cost and hence do not impact a firm's production decision. If marginal cost is ~~greater~~ ^{less} than price, it benefits a firm to produce that unit, regardless of fixed costs. Likewise, demand is based only on utility, not costs.

5. Graph supply and demand. Solve for the equilibrium price and quantity.



6. Suppose that workers' wages increase. How would this affect the model's equilibrium?

This is an increase to marginal cost. Supply shifts up.



7. Suppose that the price of Pringles rises from 5 to 7. Calculate the price elasticities of supply and demand.

$$\% \text{ change in price} = 40\%$$

$$\% \text{ change in } Q_D = \frac{8-10}{10} = -20\%$$

$$e^D = \frac{-20\%}{40\%} = -0.5$$

$$\% \text{ change in } Q_S = \frac{5-4}{4} = 25\%$$

$$e^S = \frac{25\%}{40\%} = 0.625$$

8. Suppose that the price of single malt scotch (known the world over as a perfect complement to Pringles) increases. How will this affect the model's equilibrium?

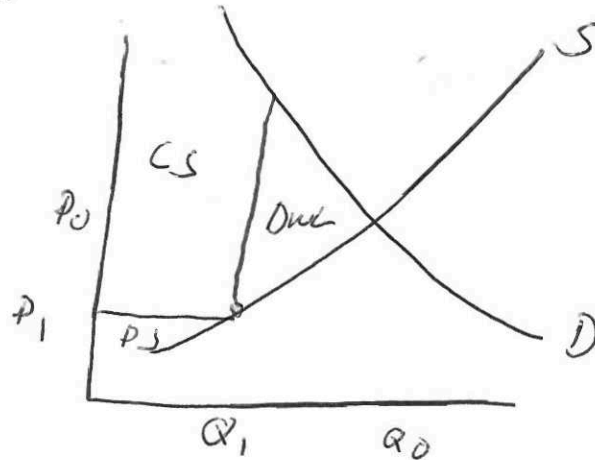
This would reduce the demand for Pringles.



9. Suppose that the government imposes a price ceiling on Pringles. Will this create deadweight loss.

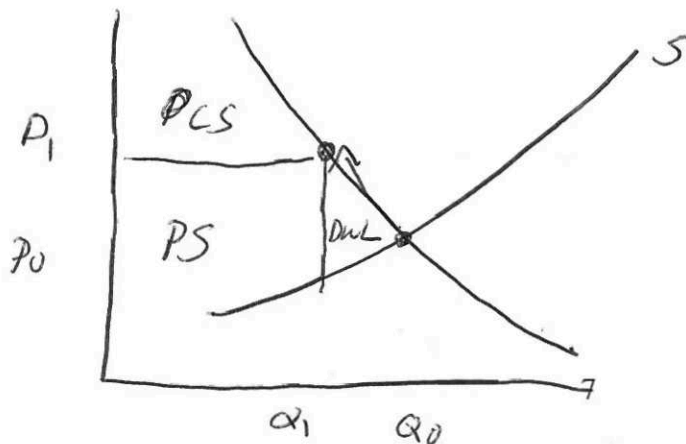
It will, but only if the price ceiling is less than the price corresponding to the intersection of supply and demand.

Let P_1 be such a price ceiling



10. Suppose that the government forbids any type of potato chip besides Pringles, giving the supplier a monopoly. How will this affect the model?

The firm will seek to restrict quantity in order to increase the price. It will move to the left along the demand curve.



11. Consider water from a lake. Suppose that there is excess demand for drinking water from the lake but that there is no way to prevent people from taking the water. Is this a public good?

No, it is not. This good is rivalrous in consumption but non-excludable. A public good must be both non-excludable and non-rivalrous in consumption.

12. True or False? In a free and unregulated market, private firms will underprovide education. explain.

It depends. If education provides a positive externality, where the private consumption of education provides public benefits, then the answer is true. In this case, consumers will not consider the public benefits and will choose an inefficiently low amount of education.

13. Suppose that there is a policy that increases the income of the wealthiest 1% of the population by 50% but that this policy does not affect the income of the other 99%. Explain why this is or is not a Pareto improvement?

It is. The policy makes at least one person better off without making anyone worse off which is the definition of a Pareto improvement.

