

N = 34

ECO 156, Fall 2026, Exam #1-B

Note: Write your name on the last page, not here.

Instructions:

Key

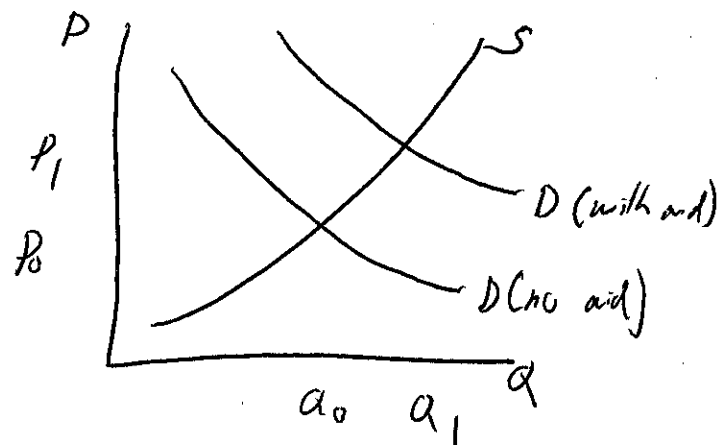
1. This exam consists of eleven questions and a bonus. You are encouraged to use the models from class when formulating your answers. Consider including graphs even if the question does not explicitly ask for one
2. Some questions are open ended. You will be graded more on the quality of your explanation than your specific answers. On "true/false" questions, for example, answering only "true" or "false" will receive no credit, even if correct.
3. You may use a five page outline while taking this exam. You may not use any electronic devices, you do not need a calculator.
4. All questions will be graded out of ten points, including the bonus. To maximize the potential for partial credit, craft clear and concise responses. If you making assumptions, state them clearly.

1. True or False? Scarcity only affect the choices of lower income households, not wealthier ones.

False. Both types of households are affected by scarcity, which may be represented by a budget constraint.

2. Using a model of supply and demand, explain how the Bennett Hypothesis has affected college tuition and enrollments.

The Bennett Hypothesis predicts that increased financial aid has boosted college tuition. Although it could work through supply, if the aid is paid to students, it will raise demand.



3. For #3-#5, consider the market for spraytans. Demand is given by $P = 200 - 10Q$, while supply is given by $40 + 2Q$. Provide one scenario where the equilibrium price and quantity do not coincide with the intersection of these two curves.

• If the firm is a ~~monopolist~~ ^{monopolist}, they will move up and to the left along the demand curve

or

• If the buyer is a monopsonist, they will move down and to the left along the supply curve.

4. Solve for the equilibrium price and quantity in this market.

$$200 - 10Q = 40 + 2Q$$

$$160 = 12Q \quad Q = 13 \frac{1}{3}$$

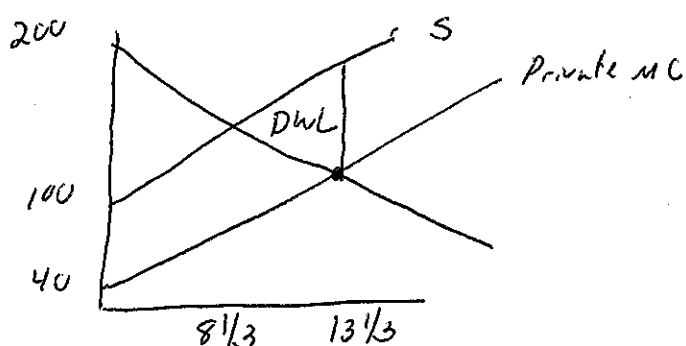
$$P = 200 - 10Q = 66 \frac{2}{3}$$

5. Now suppose that there is an additional social cost equal to 60. Calculate the deadweight loss if this externality is not corrected and then propose a solution to eliminate this deadweight loss.

$$\text{Total Supply} = 100 + 2Q = 200 - 10Q$$

$$12Q = 100 \quad Q = 8\frac{1}{3} \quad P = 113\frac{2}{3}$$

A tax equal to 60 will correct the externality

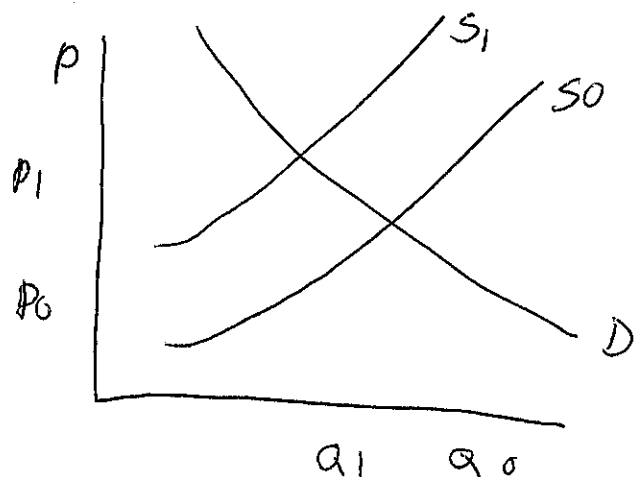


$$DWL = \frac{1}{2} (13\frac{1}{3} - 8\frac{1}{3}) \cdot 60 = 150$$

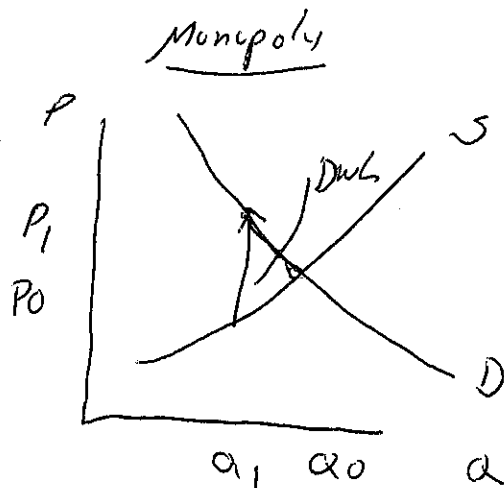
6. Using a model of supply and demand, explain why crude oil prices rose to very high levels in 1973.

Oil producers restricted supply in retaliation for U.S. support for Israel in the Yom Kippur war.

Either of the following graphs are acceptable depending on if we treat crude oil as a competitive market or as a monopoly.



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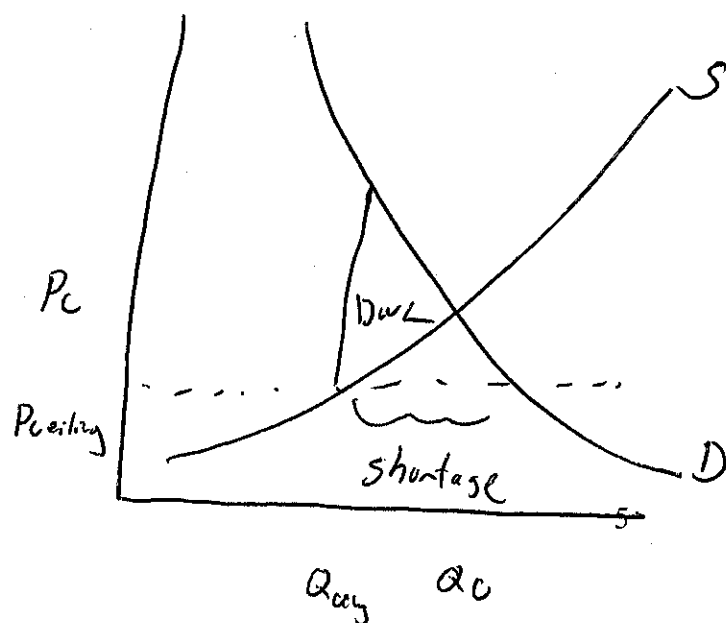


7. Are vaccines a public good?

No. To be a public good, one must be both non-rivalrous in consumption and we cannot exclude anyone from consuming the good. Neither applies to a vaccine. A vaccine is a private good that may exude positive externalities.

8. Show how a price ceiling creates deadweight loss.

In a competitive market a price ceiling will create deadweight loss if it is below the competitive price.



9. True or False? Labor's share of income has been stable for many decades.

False

- Until ≈ 2000 , labor's share was volatile but without a clear trend.
- Since 2000, it has trended downward
- More recently, its decline has accelerated.

10. If inflation is well above 2%, how should the Federal Reserve typically respond. Explain why this response may reduce inflation.

All else equal (e.g. unemployment), when inflation is above 2%, the Fed will raise interest rates. Doing so increases the payment associated with a financed good at a given price. Demand falls, lowering prices.

Consider the following data on the market for pizza cutters.

Table 1: Market for Pizza Cutters

Units	Marginal Utility	Marginal Cost	Revenue	MR
1	\$200	\$1	200	200
2	\$160	\$2	320	120
3	\$120	\$5	360	40
4	\$100	\$10	400	40
5	\$90	\$20	450	50
6	\$80	\$35	480	30
7	\$70	\$50	490	10
8	\$60	\$70	480	-10
9	\$40	\$100	360	-120
10	\$20	\$150	200	

11. Assume that the producer is a monopolist. Find the profit maximizing equilibrium. Assume that partial units are not possible.

The monopolist produces as long as $MR \geq MC$.
 For the fifth unit, marginal revenue is 50 while
 MC is 20. The sixth unit is not profitable.

$$Q = 5 \quad P = 90$$

Bonus. Now allow the monopolist from #11 to price discriminate by charging two different prices to different customers. Show how this ability could lead to even higher profits compared to #11.

Suppose the monopolist charges a price equal to \$160 for the 2 highest demand customers. This assumes they can tell customers apart and force them to pay a higher price.

$$\text{Revenue} = \$160 \times 2 + \$10 \times 3 = \$590$$

\$450 from #11.

Given that costs are the same, profits are \$140 higher.

• Note: This may not be the best the firm can do.

Name: *Timmy*