ECON 101

2020W1 midterm review session

Answer Key

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1. Introduction to Economics

- **What is Economics?**
  - **Economics:** the social science that studies the choices that individuals, businesses, governments, and entire societies as they cope with scarcity
  - **Microeconomics:** the study of choices that individuals and businesses make, the way those choices interact in markets, and the influence of government.

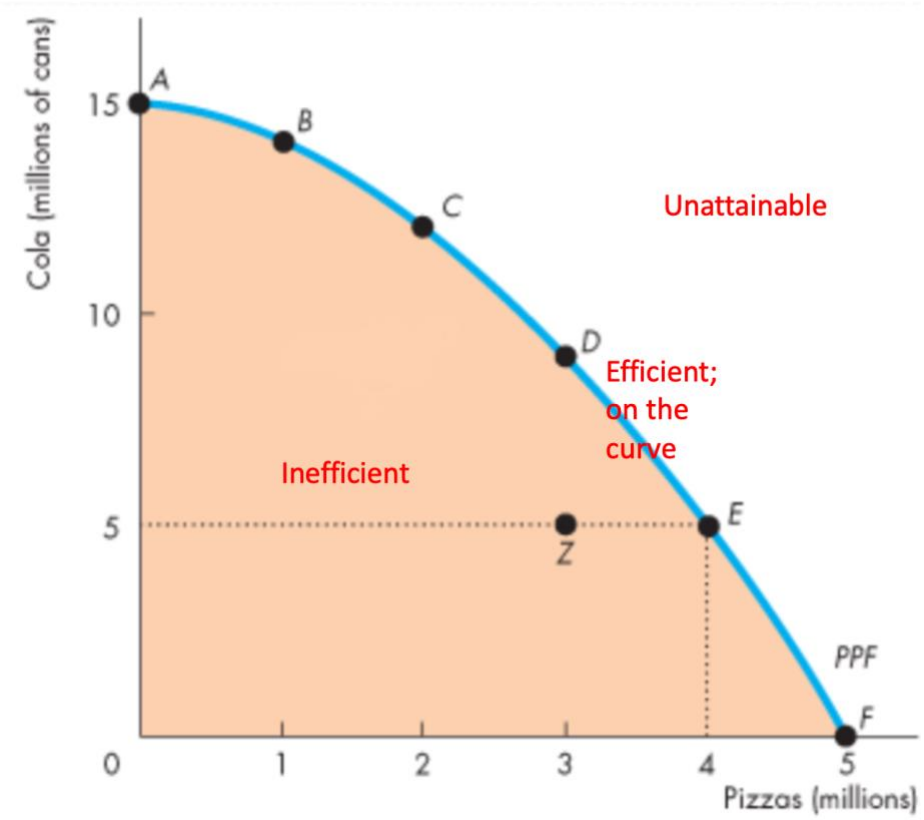
- **Economic Way of Thinking**
  - Economic questions arise due to human's infinite desires and scarce resources. Due to scarcity, we must make choices, depending on the incentives we face
    - **Scarcity:** our inability to satisfy our wants
    - **Incentives:** what motivates you to behave a certain way
  - Every choice is a **trade-off**; give up one to get another
  - Optimal choices for:
    - **Individuals**- satisfy personal desires
    - **Firms**- maximize profit
    - **Government**- maximize social welfare

- **Economic Questions**
  - How do choices end up in determining: what to produce, how much to produce, and for whom to produce?
  - When do choices made in pursuit of self-interest also promote the social interest?
  - **Economic Reasoning**: measure everything by cost and benefit
    - If Marginal Benefit>Marginal Cost, do it!
    - If Marginal Benefit < Marginal Cost, don't do it!

2. The Economic Problem & PPF

- **Opportunity Cost (OC):** the cost of second-best alternative; the benefit forgone by undertaking that activity
    - **OC of good x= (Δqty. y)/ (Δqty. x)**

- **Production Possibilities Frontier (PPF):** represents the boundary between the combinations of goods/services that can be produced and that cannot.
    - **Q1:** Label efficiency on each point of PPF:



- **Q2**: What is the effect of technological improvements for the PPF of a country? How can that induce economic growth?
    - Technological improvements increase productivity, shifting PPF outwards and inducing economic growth.

- **Q3**: Given the following production combinations for pizza and burger, what is the opportunity cost of producing additional units of pizza?

Pizza	Burger
0	10
1	9
2	7
3	4

  - 1st pizza= 1 burger
  - 2nd pizza= 2 burgers
  - 3rd pizza= 3 burgers

- **Marginal Cost, Marginal Benefit & Allocative Efficiency**
  - **Marginal cost**: additional cost incurred from one more unit
  - **Marginal benefit**: additional benefit from one more unit
  - **Allocative efficiency**: when we cannot produce one more of any good that provides greater benefit
    - where MB=MC

2-1. Economic Coordination & Trade

- **Absolute Advantage**: more productive than others
  - produce more in same time/material
  - produce same quantity with less time/material

- **Comparative Advantage:** perform an activity at a lower opportunity cost
  - supplier with comparative advantage should <u>specialize in that area</u>

- **Q4:** Assume James and Anna both produce smoothies and salad. James can produce 6 smoothies and 30 salads per hour. Anna can produce 30 smoothies and 30 salads per hour.
  - Who has an absolute advantage in smoothie production? In salad production?
    - Anna has absolute advantage in smoothie production. No one has an absolute advantage in salad production.
  - Who has a comparative advantage in smoothie production? In salad production?
    - Anna has comparative advantage in smoothie production. James has a comparative advantage in salad production.

- What should James and Anna specialize in?
  - James specialize in salad and Anna specialize in smoothie.

- **Trading condition**: Seller's OC<= price of good <= buyer's OC

- **Gains from trade**= (qty. after trade)- (qty. before trade)
  - **Q4 cont'd:** What is the quantity range of trading smoothie? Of trading salad?
    - Smoothie trade range: 1 salad<=qty. salad <=5 salad
    - Salad trade range: ⅕ smoothie <= qty. smoothie <= 1 smoothie

  - If Anna sells 10 smoothies for 20 salads, how does James benefit? How does Anna benefit?
    - James gains 5 smoothies.
    - Anna gains 5 salads.

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3. Supply and Demand

- **Demand**
  - **Quantity Demanded**: amount of goods/services that consumers plan to buy during a specific time and place

  - **Law of Demand**: Ceteris Paribus, the higher the price of the good, the smaller quantity demanded

  - **Demand:** the entire relationship between the price of goods and quantity demanded

  - **Shift factors:**
    - Price of related goods
    - Expected future prices
    - Income
    - Expected future income
    - population
    - personal preference

- **Supply**
  - **Quantity Supplied**: amount of goods/services that producers plan to sell during a given time period at a particular price
  - **Law of Supply**: Ceteris paribus, the higher the price of the good, the greater quantity supplied
  - **Supply:** the entire relationship between the price of good and quantity supplied
  - **Shift factors:**
    - price of factors of production
    - price of related goods produced
    - expected future prices
    - technology
    - state of nature

- **Equilibrium**
  - **Equilibrium price**: the price at which the quantity demanded equals quantity supplied
  - **Equilibrium quantity:** the quantity bought and sold at the equilibrium price

- **Q5:** Predict changes in Eq and Ep for given scenarios
  - Increase in demand
    - Eq increase; Ep increase
  - Decrease in demand
    - Eq decrease; Ep decrease
  - Increase in supply
    - Eq increase; Ep decrease
  - Decrease in supply
    - Eq decrease; Ep increase
  - Increase in Supply & Demand
    - Eq increases; Ep uncertain
  - Decrease in Supply & Demand
    - Eq decreases; Ep uncertain
  - Increase in Supply & Decrease in Demand
    - Eq uncertain; Ep decrease
  - Decrease in Supply & Increase in Demand
    - Eq uncertain; Ep increase

- **Q6:** Assume that potato chips and Oreos are substitutes, and they require the same production resources. If the demand for potato chips suddenly rises, what happens to the market of potato chips and Oreos? Explain using the Supply and Demand curve action.
    - Ep and Eq of potato chips increase due to increase in demand.
    - If a good's demand increases, its substitute good's demand decreases; Oreos demand will decrease. Oreos supply will also decrease because they require the same production resources. Oreos face decrease in demand and supply; Eq decrease, Ep uncertain.

- **Q7:** If polyester is an inferior good, and household income goes up, what happens in the supply and demand graph for polyester?
    - If household income rises, inferior good's demand decreases; demand curve shifts left.

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4. Elasticity

- **Price Elasticity of Demand**
    - Responsiveness of QD of a good to a change in its price
    - **(% change in QD)/(% change in price)**
    - Influence factors
        - closeness of substitutes
        - proportion of income spent on the good
        - time elapsed since price change

- **Price Elasticity of Supply**
    - Responsiveness of QS of a good to change in its price
    - **(% change in QS)/(% change in price)**
    - Influence factors
        - resource substitution possibilities
        - time frame for supply decision

- **Measuring elasticity of demand and supply**

Elasticity	Calculation	Explanation	Examples
Perfectly Elastic	Ed=undefined	When price of a good doesn't change despite the QD	• Highly situational/hypothetical
Elastic	Ed>1	If % change in QD is greater than % change in P	• Luxury goods
Unit Elastic	Ed=1	If % change in QD equals % change in P	• situational
Inelastic	Ed<1	If % change in P is greater than % change in QD	• Necessities
Perfectly Inelastic	Ed=0	If QD demand doesn't change despite the P	• Highly situational/hypothetical

- **Elasticity and Total Revenue**
  - TR= (price)*(quantity)

Elasticity	When price increases
elastic demand	TR decreases
inelastic demand	TR increases
unit elastic demand	TR does not change

- **Cross Price Elasticity**
  - Responsiveness of QD of a good to a change in the price of a complementary/substitute good
  - **(% change in QD)/(% change in price of complement/substitute)**
  - positive→ substitutes
  - negative → compliments
  - zero→ unrelated goods

- **Income Price Elasticity**
  - Responsiveness of QD to a change in consumer's income
  - **(% change in QD)/(% change in income)**
  - >1 → normal good; income elastic
  - 0<income elasticity<1 → normal good, income inelastic
  - <0 → inferior good

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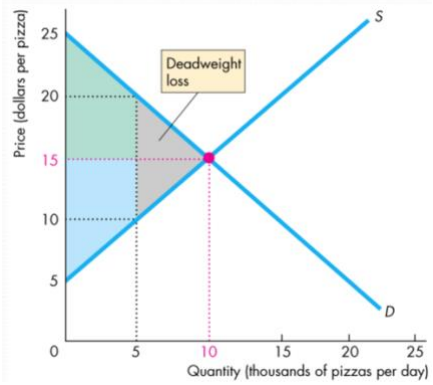
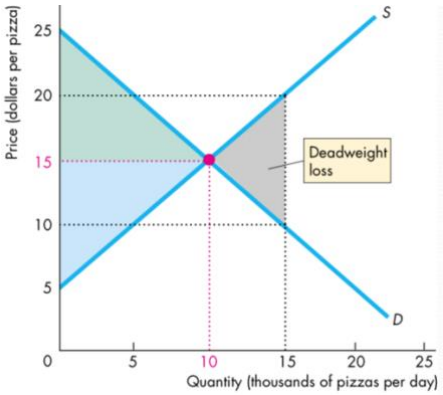
5. Equity & Efficiency

- **Consumer Surplus**
  - excess benefit received from a good over the amount paid for it
    - Ex) When a buyer is willing to pay $10 for a good, but the market price is only $5
  - = Area under the demand curve & above price paid

- **Producer Surplus**
  - excess of the amount received from the sale of a good over the cost of producing it
    - Ex) When a seller receives $20 for a good worth $5
  - =area under the market price $ over the supply curve

- **Market Efficiency**
  - Efficiency met at QD=QS, at market equilibrium
  - Consumer surplus is maximized.
  - Producer Surplus is maximized.

- **Market Inefficiency**

Underproduction	Overproduction
	

• Efficient allocation at (Q=10,000, P=$15)
• If production is limited to 5,000 pizzas:
  • Consumers are willing to pay $20 for 5,000 pizzas that only costs $10 to make
  • There is an *underproduction*; quantity is inefficient for consumers
• Deadweight loss incurred=total surplus decreases
	• Efficient allocation at (Q=10,000 P=$15)
	• If production is expanded to 15,000 pizzas:
	  • Consumers are willing to pay $10 but it costs $20 to make
	  • There is an overproduction, quantity is inefficient for producers
	• Deadweight loss incurred=total surplus decreases

More Practice!

1) Which of the following is NOT an example of a microeconomic topic?
   a) the effect of a flood in BC on the price of bottled water
   b) Wages of cross-country truckers
   c) How the unemployment and inflation rates are related
   d) the effect of a frost on the Florida orange price

2) Charles is planning to either: play basketball, watch TV, or eat pizza. The opportunity cost of eating pizza:
   a) is the value of playing basketball, if Charles prefers that over watching TV.
   b) depends how much the pizza costs
   c) depends on how much Charles loves pizza
   d) the value of watching TV if Charles prefers playing basketball over watching TV

3) If Marc is producing at a point inside his production possibilities frontier, then he:
   a) has a high opportunity cost of moving from this point
   b) can increase production of both goods with zero opportunity cost
   c) is fully using all his resources and allocating his resources efficiently
   d) has unlimited resources

4) Which situation is the best example of the Law of Demand?
   a) When the price of books increases, consumers buy fewer books.
   b) When the wages of auto workers rise, automakers raise the price of cars.
   c) When the price of computers fall, demand for computer games increases.
   d) When consumer incomes rise, consumers buy more televisions.

5) If demand for product X decreases when the price of product Y decreases, then X and Y are:
   a) not related
   b) both inferior foods
   c) complements
   d) substitutes

6) When ducks are slaughtered for meat, their feathers can be used in the production of pillows. Given this relationship, if the demand for duck meat rises,
   a) the price of feather pillow falls
   b) supply of feather pillow falls
   c) demand for feather pillow rises
   d) the price of duck meat falls

7) For which of the following products is the consumer's demand curve most likely to be vertical?
   a) lobster, for a seafood lover
   b) cars, for high school students
   c) insulin, for a diabetic
   d) beef, for a food lover

8) The more broadly a good is defined,
   a) the fewer substitutes it has so the less elastic is its demand
   b) the more substitutes it has so the more elastic is its demand
   c) the fewer substitutes it has so the more elastic is its demand
   d) the more complements it has so the more elastic is its demand

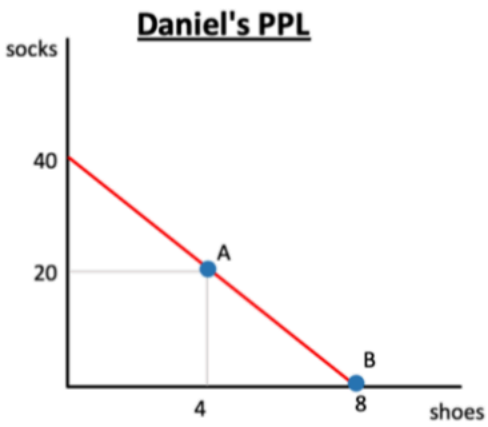
9) The cross-price elasticity of demand between rifles and bullets is likely to be
   a) negative because the goods are substitutes
   b) positive because the goods are substitutes
   c) 0 because the goods are not substitutes
   d) negative because the goods are complements

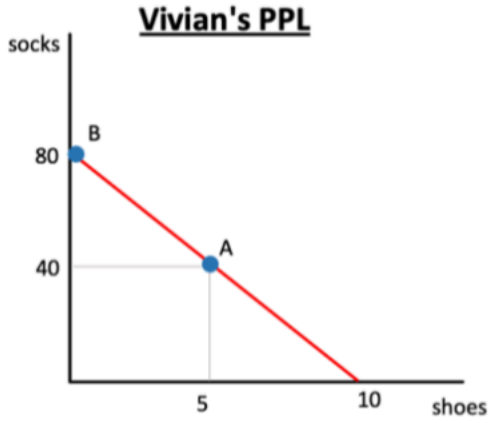
10) ( ) have income elasticities that are ( ).
   a) normal goods, negative
   b) luxuries, less than one
   c) necessities, greater than 1
   d) inferior goods, negative

11) If a firm raises the price of its product, its total revenue will
   a) always increase
   b) never increase
   c) increase only if demand is price inelastic
   d) increase only if demand is price elastic

12) When the price of a good increased by 10%, the quantity demanded decreased by 5%. The price elasticity of demand is ( )%, and a price rise will () TR.
   a) 0.5, increase
   b) -2.0, decrease
   c) 0.5, decrease
   d) 2, increase

13) In one hour, Daniel can produce 40 socks or 8 shoes; Vivian can produce 80 socks or 10 shoes.
   a) Draw PPF for Daniel and Vivian, showing the production point (A) for each PPF when each spends 30 min of an hour producing socks and 30 min producing shoes.
   b) Who should specialize in what production? Show the specialized production point B on the PPF.
   c) After specialization, there are two options for trade:
      i) 4 shoes for 24 socks
      ii) 4 shoes for 16 socks
      Which option will be acceptable to both for trade?





(a)
(b) Daniel specialize in shoes and Vivian specialize in socks.
(c) Option 1 will be acceptable to both for trade.

14) For each scenario, draw the shift of supply or demand curve and explain the effect on Ep and Eq for Supply & Demand curve for Lululemon pants:
   a) A fire in India destroys the latest shipment of Lululemon goods.
      i) supply curve shift left
   b) The new movie, 'Yoga Mamas' is a huge hit, and yoga wear popularity rises.
      i) demand curve shift right
   c) Lululemon slashed its prices on all products by 50%.
      i) no curve shift; since this is only change in price, shift along the curve and QD increases

15) The price of Canucks tickets drops from $120 to $100 a game. The quantity of tickets sold falls from 160,000 tickets to 144,000.
   a) Calculate the price elasticity of demand for Canucks tickets.
      i) 0.58, inelastic
   b) As the price falls, by what % should the demand have risen for the TR to be maximum?
      i) 18.2%; to make elasticity unit elastic
   c) By what % should the demand have risen for the demand to be perfectly inelastic?
      i) 0%

16) The table below gives the weekly supply schedules of bike rides for the only sellers in the market, Kayla, Marj, and Dorothy.

a) Construct the market supply schedule.

i) Market Supply Schedule

Price ($/ride)	Market Supply
100	75
90	60
80	45
70	30
60	15
50	5
40	0

b) When the price is $80 a ride, how much is each firm's surplus? How much is the market producer surplus?

Price ($ per ride)	Q. supplied by Kayla	Q. supplied by Marj	Q. supplied by Dorothy
100	30	25	20
90	25	20	15
80	20	15	10
70	15	10	5
60	10	5	0
50	5	0	0
40	0	0	0

ii) When the price is $80 a ride, producer surplus for:

- Kayla: (80-40)*20/2= 400
- Marj: (80-50)*15/2= 225
- Dorothy: (80-60)*10/2= 100
- Market producer surplus= 725