Microeconomics Theory and Applications with Calculus 4th edition Perloff Test Bank

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Microeconomics: Theory and Applications with Calculus, 4e **(Perloff)**
Chapter 2 Supply and Demand

2.1 Demand

1) Suppose the demand for Digital Video Recorders (DVRs) is given by $Q = 250 - .25p + 4p_C$, where Q is the quantity of DVRs demanded (in 1000s), p is the price of a DVR, and p_C is the price of cable television. How much does the quantity demanded for DVRs change if the p rises by $40?
A) drops by 10,000 DVRs
B) increases by 16,000 DVRs
C) drops by 2,500 DVRs
D) increases by 4,000 DVRs
Answer: A
Topic: Demand
Skill: Application of knowledge
Status: Old

2) Suppose the demand for Digital Video Recorders (DVRs) is given by $Q = 250 - .25p + 4p_C$, where Q is the quantity of DVRs demanded (in 1000s), p is the price of a DVR, and p_C is the price of cable television. How much does Q change if the price of cable changes slightly (i.e. the partial derivative of demand with respect to p_C)?
A) 125
B) 4.25
C) 4
D) .25
Answer: C
Topic: Demand
Skill: Application of knowledge
Status: Old

3) Suppose the demand for Digital Video Recorders (DVRs) is given by $Q = 250 - .25p + 4p_C$, where Q is the quantity of DVRs demanded (in 1000s), p is the price of a DVR, and p_C is the price of cable television. How much of a change in p must occur for Q to increase by one?
A) fall by 25¢
B) fall by $4
C) increase by 25¢
D) fall by $4.25
Answer: B
Topic: Demand
Skill: Application of knowledge
Status: Old

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4) According to the Law of Demand, the demand curve for a good will
A) shift leftward when the price of the good increases.
B) shift rightward when the price of the good increases.
C) slope downward.
D) slope upward.
Answer: C
Topic: Demand
Skill: Analytical thinking
Status: Old

5) An increase in the price of pork will lead to
A) a movement up along the demand curve of pork.
B) a movement down along the demand curve of pork.
C) a rightward shift of the demand curve of pork.
D) a leftward shift of the demand curve of pork.
Answer: A
Topic: Demand
Skill: Analytical thinking
Status: Revised

6) An increase in consumer incomes will lead to
A) a rightward shift of the demand curve for plasma TVs.
B) a movement upward along the demand curve for plasma TVs.
C) a rightward shift of the supply curve for plasma TVs.
D) no change of the demand curve for plasma TVs.
Answer: A
Topic: Demand
Skill: Application of knowledge
Status: Old

7) Consider the demand function Qd = 150 - 2P. The effects of other determinants of Qd is reflected in
A) the intercept of the function.
B) the slope of the function.
C) neither the slope nor the intercept of the function.
D) in both the slope and the intercept of the function.
Answer: A
Topic: Demand
Skill: Analytical thinking
Status: Old

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8) Consider the demand functions:
A) Qd = 250 - 2P
B) Qd = 300 - 3P
Which of the demand functions reflects a higher level of consumer incomes?
A) A
B) B
C) A and B reflect the same consumer incomes.
D) More information is needed.
Answer: D
Topic: Demand
Skill: Application of knowledge
Status: Old

9) Holding all other factors constant, consumers demand more of a good the
A) higher its price.
B) lower its price.
C) steeper the downward slope of the demand curve.
D) steeper the upward slope of the demand curve.
Answer: B
Topic: Demand
Skill: Analytical thinking
Status: Old

10) The demand curve for Widgets is given by $Q_D = 6000 - 2y - 200p + 30p_G$, where Q_D is the quantity of widgets demanded, y is the per capita income and p_G is the price of Gizmos. An increase in per capita income will cause
A) demand shifts left.
B) demand shifts right.
C) demand increases.
D) movement along the demand curve.
Answer: A
Topic: Demand
Skill: Application of knowledge
Status: Old

11) As the price of a good increases, the change in the quantity demanded can be shown by
A) shifting the demand curve leftward.
B) shifting the demand curve rightward.
C) moving down along the same demand curve.
D) moving up along the same demand curve.
Answer: D
Topic: Demand
Skill: Analytical thinking
Status: Old

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12) If the price of automobiles were to increase substantially, the demand curve for gasoline would most likely
A) shift leftward.
B) shift rightward.
C) become flatter.
D) become steeper.
Answer: A
Topic: Demand
Skill: Application of knowledge
Status: Old

13) If the price of automobiles were to decrease substantially, the demand curve for automobiles would most likely
A) shift rightward.
B) shift leftward.
C) remain unchanged.
D) become steeper.
Answer: C
Topic: Demand
Skill: Application of knowledge
Status: Old

14) If the price of automobiles were to decrease substantially, the demand curve for public transportation would most likely
A) shift rightward.
B) shift leftward.
C) remain unchanged.
D) remain unchanged while quantity demanded would change.
Answer: B
Topic: Demand
Skill: Application of knowledge
Status: Old

15) An increase in the demand curve for orange juice would be illustrated as a
A) leftward shift of the demand curve.
B) rightward shift of the demand curve.
C) movement up along the demand curve.
D) movement down along the demand curve.
Answer: B
Topic: Demand
Skill: Analytical thinking
Status: Old

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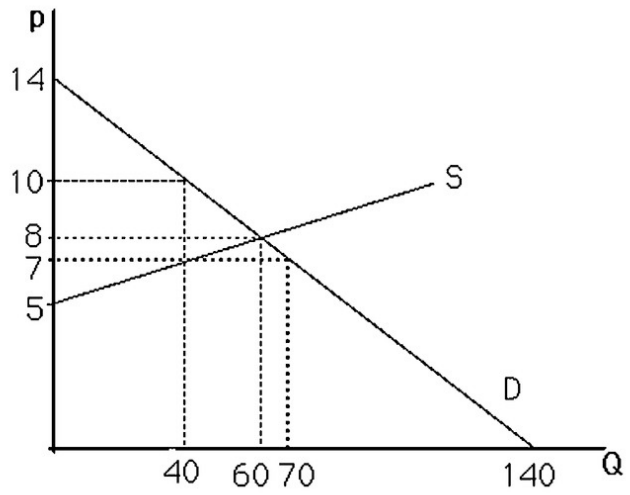
16) The term "inverse demand curve" refers to
A) a demand curve that slopes upward.
B) expressing the demand curve in terms of price as a function of quantity.
C) the demand for "inverses."
D) the difference between quantity demanded and supplied at each price.
Answer: B
Topic: Demand
Skill: Analytical thinking
Status: Old

17) If the demand for oranges is written as Q = 100 - 5p, then the inverse demand function is
A) Q = 5p - 100.
B) Q = 20 - .2p.
C) p = 20 - 5Q.
D) p = 20 - .2Q.
Answer: D
Topic: Demand
Skill: Analytical thinking
Status: Old

18) To determine the total demand for all consumers, sum the quantity each consumer demands
A) at a given price.
B) at all prices and then sum this amount across all consumers.
C) Both A and B will generate the same total demand.
D) None of the above.
Answer: A
Topic: Demand
Skill: Analytical thinking
Status: Old

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19) The above figure shows a graph of the market for pizzas in a large town. No pizzas will be demanded unless price is less than
A) $0.
B) $5.
C) $12.
D) $14.
Answer: D
Topic: Demand
Skill: Analytical thinking
Status: Old

20) The above figure shows a graph of the market for pizzas in a large town. If the price price rises from 7 to 8, what is the change in quantity demanded for pizzas?
A) -10
B) -30
C) -20
D) 20
Answer: A
Topic: The Demand Function
Skill: Analytical thinking
Status: Old

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21) The demand for pizzas in a large town is written as: $Q_d = 120 - 10P + 5P_b - 0.5P_s - 10Y$, where Q_d is the quantity demanded, P is the price, P_b is the price of burritos, P_s is the price of soft drinks sold in the pizza restaurants, and Y is personal income per month (in thousand dollars). If there is a $1,000 increase in personal income, how will the Q_d change?
A) increase by 10
B) decrease by 10
C) unchanged
D) not enough information provided
Answer: B
Topic: The Demand Function
Skill: Application of knowledge
Status: Old

22) The demand for pizzas in a large town is written as: $Q_d = 120 - 10P + 5P_b - 0.5P_s - 10Y$, where Q_d is the quantity demanded, P is the price, P_b is the price of burritos, P_s is the price of soft drinks sold in the pizza restaurants, and Y is personal income per month (in thousand dollars). We can conclude that burritos and pizzas are
A) substitutes.
B) normal goods.
C) complements.
D) unrelated.
Answer: A
Topic: The Demand Function
Skill: Application of knowledge
Status: Old

23) The demand for pizzas in a large town is written as: $Q_d = 120 - 10P + 5P_b - 0.5P_s - 10Y$, where Q_d is the quantity demanded, P is the price, P_b is the price of burritos, P_s is the price of soft drinks sold in the pizza restaurants, and Y is personal income per month (in thousand dollars). What is $\Delta Q/\Delta Ps$?
A) 5
B) -5
C) 0.5
D) -0.5
Answer: D
Topic: The Demand Function
Skill: Analytical thinking
Status: Old

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24) Suppose the demand for widgets is given by $Q_D = 100 - 5p - p_d + 2I$, where I is average consumer income, p is the price of lemons, and p_d is the price of doodads. According to this equation, doodads are a(n) _____ for widgets.
A) substitute
B) complement
C) input
D) None of the above
Answer: B
Topic: Demand
Skill: Application of knowledge
Status: Revised

For the following, please answer "True" or "False" and explain why.

25) If a good is not produced, then there is no demand for it.
Answer: False. The demand for a product is independent of its supply. It is possible that people want to buy some of the product, but at prices that are below what sellers would require to begin production.
Topic: Demand
Skill: Analytical thinking
Status: Old

26) Because people prefer name-brand pain-relieving drugs over store-brand pain-relieving drugs, demand curves do not slope downward for pain-relieving drugs.
Answer: False. Demand curves slope downward assuming all other factors do not change. Consumers may view brand-name drugs to be of higher quality than store-brand drugs, and therefore the demand curve for brand-name drugs lies to the right of the demand curve for store-brand drugs.
Topic: Demand
Skill: Analytical thinking
Status: Old

27) The quantity of a good that consumers demand depends only on the price of the good.
Answer: False. The quantity of a good demanded depends on many factors including: price, consumers' incomes, and the price of related goods.
Topic: Demand
Skill: Analytical thinking
Status: Old

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28) During the winter of 1997-1998, the northeastern United States experienced warmer than usual conditions. The price of home heating oil was less than it was during the previous winter, but people bought less home heating oil. This contradicts the Law of Demand.
Answer: False. The statement claiming a contradiction confuses a change in quantity demanded with a change in the demand curve. The law of demand refers to movements along a given demand curve. The mild weather caused a leftward shift of the demand curve.
Topic: Demand
Skill: Analytical thinking
Status: Old

29) When the price of beef rises, consumers switch consumption to substitutes such as chicken and fish, thereby decreasing the demand for beef.
Answer: False. The statement confuses a change in quantity demanded with a shift in demand. When the price rises, consumers find substitute goods to consume, which reduces the quantity demanded, not the demand curve.
Topic: Demand
Skill: Analytical thinking
Status: Old

30) Suppose an individual inverse demand curve is given as $P = 2 - 1/2q^i$, where q^i is the quantity demanded by individual i. There are 50 individual consumers with this identical, individual inverse demand curve. Solve for the market demand curve.
Answer: Solve for the individual, regular demand curve, $q^i = 4 - 2P$. Multiply the individual demand curve by 50 to yield $Q^D = 200 - 100P$.
Topic: Demand
Skill: Analytical thinking
Status: Old

31) Suppose the market demand curve for pizza can be expressed as $Q_D = 100 - 2P + 3P_b$, where Q_D is the quantity of pizza demanded, P is the price of a pizza, and P_b is the price of a burrito. What is the slope of this demand function, and what information does the slope provide?
Answer: The slope is -2. The slope tells us how a change in the price of pizzas affects the quantity of pizzas demanded. An increase in the price of pizzas by $1 will result in a decrease of the quantity demanded by two pizzas.
Topic: Demand
Skill: Analytical thinking
Status: Old

32) Suppose the demand for a particular product can be expressed as $Q = 100/p$. Calculate the total amount spent on this good when $p = 10$, 20, and 50. Can you make a generalization about the mathematical form of this demand curve and consumer behavior in this market?
Answer: In all cases, total expenditure equals 100 (since $p * Q = 100$). In general, a nonlinear demand curve of the form $Q = A/p$ means that consumers wish to spend a total of A on this good regardless of its price.
Topic: Demand
Skill: Analytical thinking
Status: Old

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33) Suppose N consumers each have an identical demand curve for a good is given by $Q = a - bp$, where Q is the quantity demanded, p is the price, and a and b are positive constants. What is the market demand curve? Is the slope (in price) of the market demand greater or less than the slope of each individual demand curve?
Answer: The market demand is $Q^M = N \bullet Q = N(a - bp) = Na - Nbp$. The slope of the market demand is Nb which is greater (more flat on graph) than the individual demand curve.
Topic: Summing Demand Functions
Skill: Analytical thinking
Status: Old

34) Show that the slope of the market demand curve is the summation of the slopes of individuals' demand curves.
Answer: The market demand is given by $Q = D^1(p) + D^2(p) + ... + D^N(p)$, where $D^i(p)$ is the demand for consumer i and there are N consumers. The addition rule of derivatives implies that the derivative of the market demand is the sum of derivatives of each individual's demand.
Topic: Summing Demand Functions
Skill: Analytical thinking
Status: Old

35) The demand curve for Widgets is given by $Q_D = 6000 - 2y - 200p + 30p_G$, where Q_D is the quantity of widgets demanded, y is the per capita income and p_G is the price of Gizmos. Compute the partial derivatives *with respect to y and* p_G.
Answer: -2 and +30 respectively
Topic: The Demand Function
Skill: Analytical thinking
Status: Old

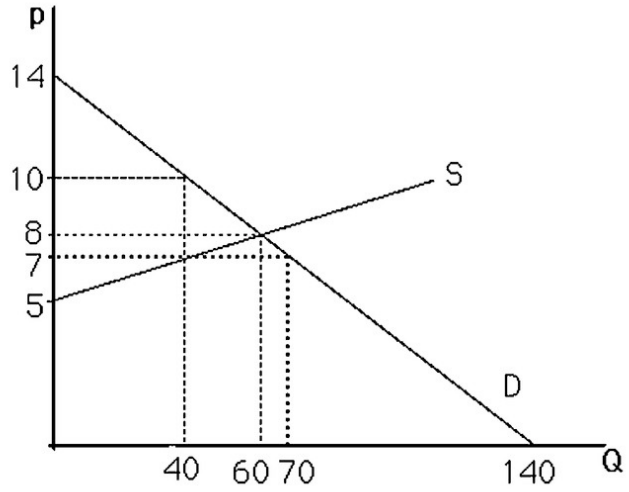
2.2 Supply

1) Suppose the demand curve for a good shifts rightward, causing the equilibrium price to increase. This increase in the price of the good results in
A) a rightward shift of the supply curve.
B) an increase in quantity supplied.
C) a leftward shift of the supply curve.
D) a downward movement along the supply curve.
Answer: B
Topic: Supply
Skill: Analytical thinking
Status: Old

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2) A rise in the oil price will
A) shift the supply curve of gas to the left.
B) shift the supply curve of gas to the right.
C) leave the supply curve of gas unchanged.
D) Not enough information is provided.
Answer: A
Topic: Supply
Skill: Application of knowledge
Status: Old



3) The above figure shows a graph of the market for pizzas in a large town. No pizzas will be supplied unless the price is above
A) $0.
B) $5.
C) $12.
D) $14.
Answer: B
Topic: Supply
Skill: Analytical thinking
Status: Old

4) Supply curves
A) slope upward.
B) slope downward.
C) are horizontal.
D) can have many shapes.
Answer: D
Topic: Supply
Skill: Analytical thinking
Status: Old

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5) Suppose there are 100 identical firms in the rag industry, and each firm is willing to supply 10 rags at any price. The market supply curve will be a(n)
A) vertical line where Q = 10.
B) vertical line where Q = 100.
C) vertical line where Q = 1000.
D) horizontal line where Q = 1000.
Answer: C
Topic: Supply
Skill: Analytical thinking
Status: Old

6) The expression "increase in quantity supplied" is illustrated graphically as a
A) leftward shift in the supply curve.
B) rightward shift in the supply curve.
C) movement up along the supply curve.
D) movement down along the supply curve.
Answer: C
Topic: Supply
Skill: Analytical thinking
Status: Old

7) If the supply curve of a product changes so that sellers are now willing to sell two additional units at any given price, the supply curve will
A) shift leftward by two units.
B) shift rightward by two units.
C) shift vertically up by two units.
D) shift vertically down by two units.
Answer: B
Topic: Supply
Skill: Analytical thinking
Status: Old

8) The market supply curve is found by
A) horizontally summing all individual supply curves.
B) vertically summing all individual supply curves.
C) Either A or B above since they both give the same answer.
D) None of the above.
Answer: A
Topic: Summing Supply Functions
Skill: Analytical thinking
Status: Old

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9) Technological innovation in the production of computers has led to
A) a decrease in the quantity demanded for computers.
B) a rightward shift of the supply curve for computers.
C) a decrease in the quantity supplied of computers.
D) None of the above.
Answer: B
Topic: Supply
Skill: Analytical thinking
Status: Old

10) Restricting imports tends to
A) shift the demand curve for the product to the left.
B) shift the demand curve for the product to the right.
C) change the shape of the supply curve.
D) increase the quantity supplied of a product.
Answer: C
Topic: Supply
Skill: Analytical thinking
Status: Old

11) Assume the supply function of ice cream is written as: Qs = 100 + 20P - 10Pm, where Qs is the quantity supplied, P is price of ice cream, and Pm is the price of milk ($/gallon). If milk price increases by $2/gallon due to the policy change, how will the Qs change?
A) decreases by 20
B) increases by 20
C) decreases by 10
D) increases by 10
Answer: A
Topic: The Supply Function
Skill: Analytical thinking
Status: Old

12) Assume the supply function of ice cream is written as: Qs = 100 + 20P - 10Pm, where Qs is the quantity supplied, P is price of ice cream, and Pm is the price of milk ($/gallon). If milk price is held fixed at $4/gallon, what is the slope of supply function for ice cream?
A) -10
B) 10
C) -20
D) 20
Answer: D
Topic: The Supply Function
Skill: Analytical thinking
Status: Old

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For the following, please answer "True" or "False" and explain why.

13) The Law of Supply insures that supply curves slope upward.
Answer: False. There is no Law of Supply. Supply curves can take multiple shapes and thus don't have to be upward sloping. (p. 22)
Topic: Supply
Skill: Analytical thinking
Status: Old

14) Suppose the following information is known about a market:

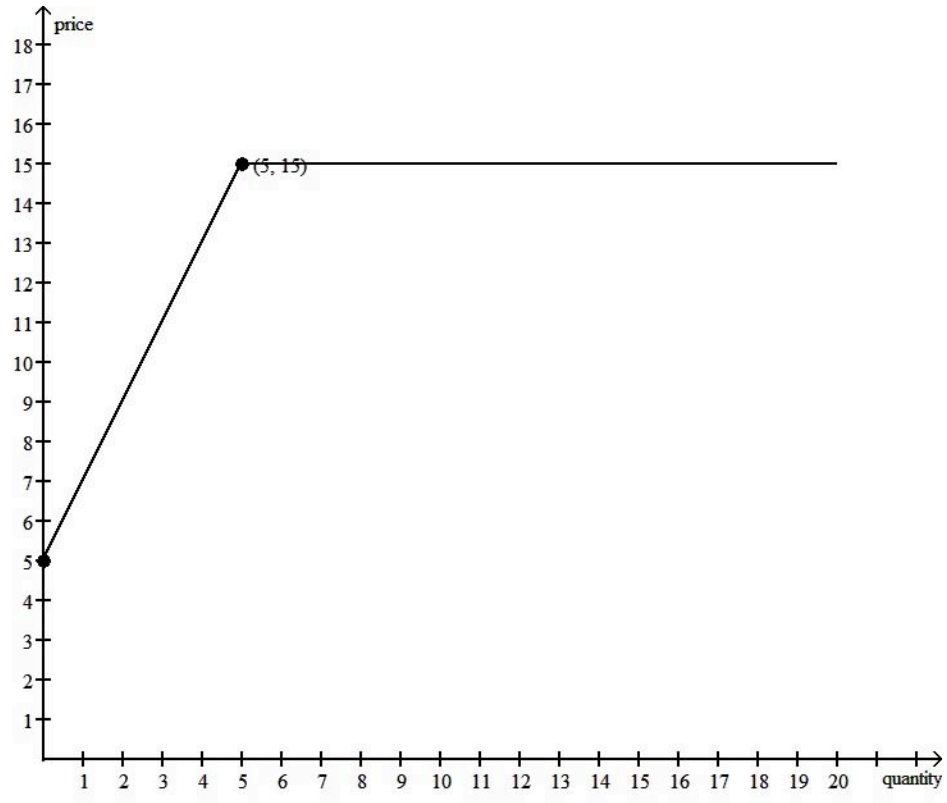
1. Sellers will not sell at all below a price of $2.
2. At a price of $10, any given seller will sell 10 units.
3. There are 100 identical sellers in the market.

Assuming a linear supply curve, use this information to derive the market supply curve.
Answer: First, $Q = 100q$ since all firms are identical. This gives two points: ($p = 2$, $Q = 0$) and ($p = 10$, $Q = 1000$). From the first point, it is known that $p = 2 + bQ$. When $Q = 1000$, $10 = 2 + b(1000)$. Solving for b yields $b = .008$. Rearranging to solve for Q yields: $Q = -250 + 125p$ or $P = 2 + .008Q$.
Topic: Supply
Skill: Analytical thinking
Status: Old

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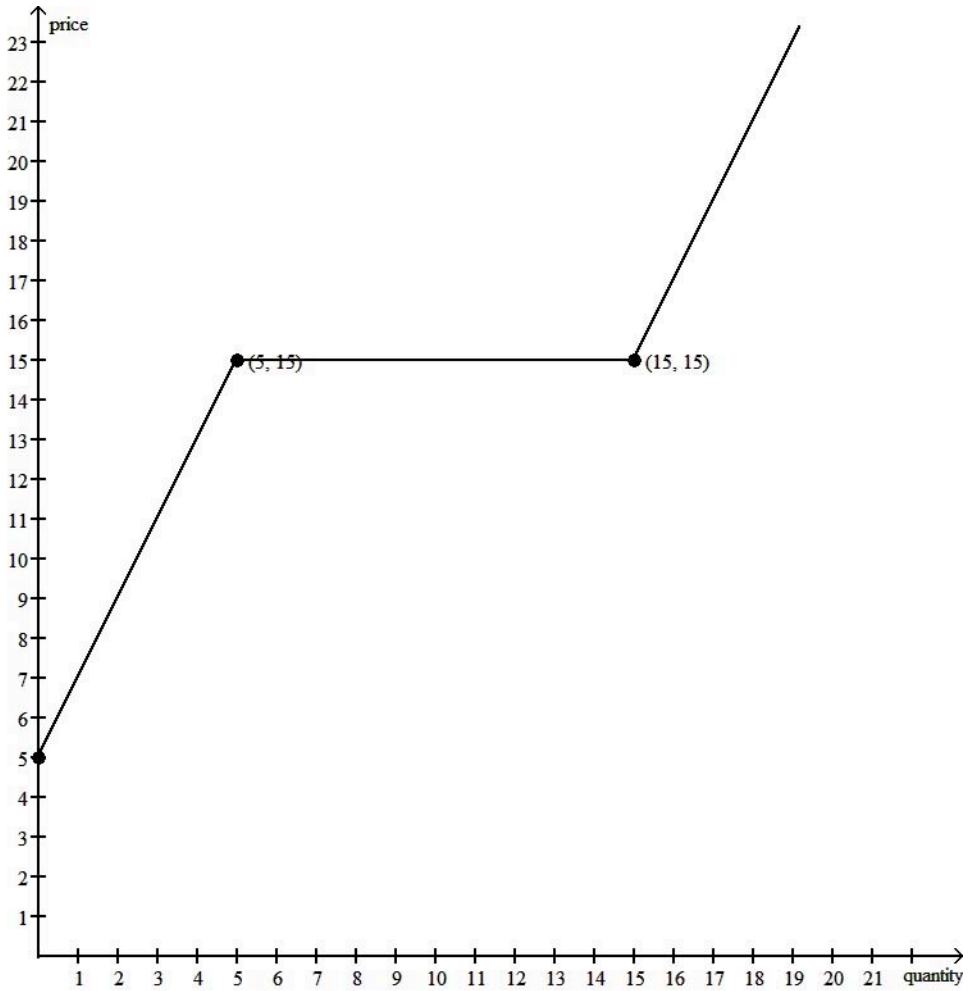
15) Suppose a market is supplied by domestic producers and and an international supply. The domestic (inverse) supply curve is given by the $p = 5 + 2Q$, and the foreign supply curve is given by $p = 15$. Draw the total supply curve. On a second graph, draw the total supply curve if the government imposes a quota of 10 on foreign supply.
Answer: Without a quota, the supply curve will follow the domestic supply curve for $Q \leq 5$ and $p = 15$ for $Q > 5$.



With the quota, for $Q > 15$ the supply rises with the domestic supply

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Topic: Supply
Skill: Analytical thinking
Status: Old

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16) The U.S. government imposes a number of import quotas on dairy products, including Swiss cheese. The domestic supply of Swiss cheese is given by:

$Q^{Dom} = 250p - 1000$

The supply of Swiss cheese from foreign producers to the U.S. (mostly from Switzerland, of course), is given by:

$Q^{For} = 1125p - 4500$

In both equations above, Q is the quantity of cheese (100's of lbs/month), and p is the price per pound.

a. Using the equations above, derive the total supply of cheese equation to the U.S. in the absence of any quota.

Suppose that fears of neutral countries (like Switzerland) spark the U.S. to restrict imports of Swiss cheese to $Q = 9000$.

b. On a graph, draw (*i*) the domestic, (*ii*) foreign and (*iii*) total supply with the quota.

Answer:

a. We add the domestic supply and foreign supply by adding the quantities at any price.

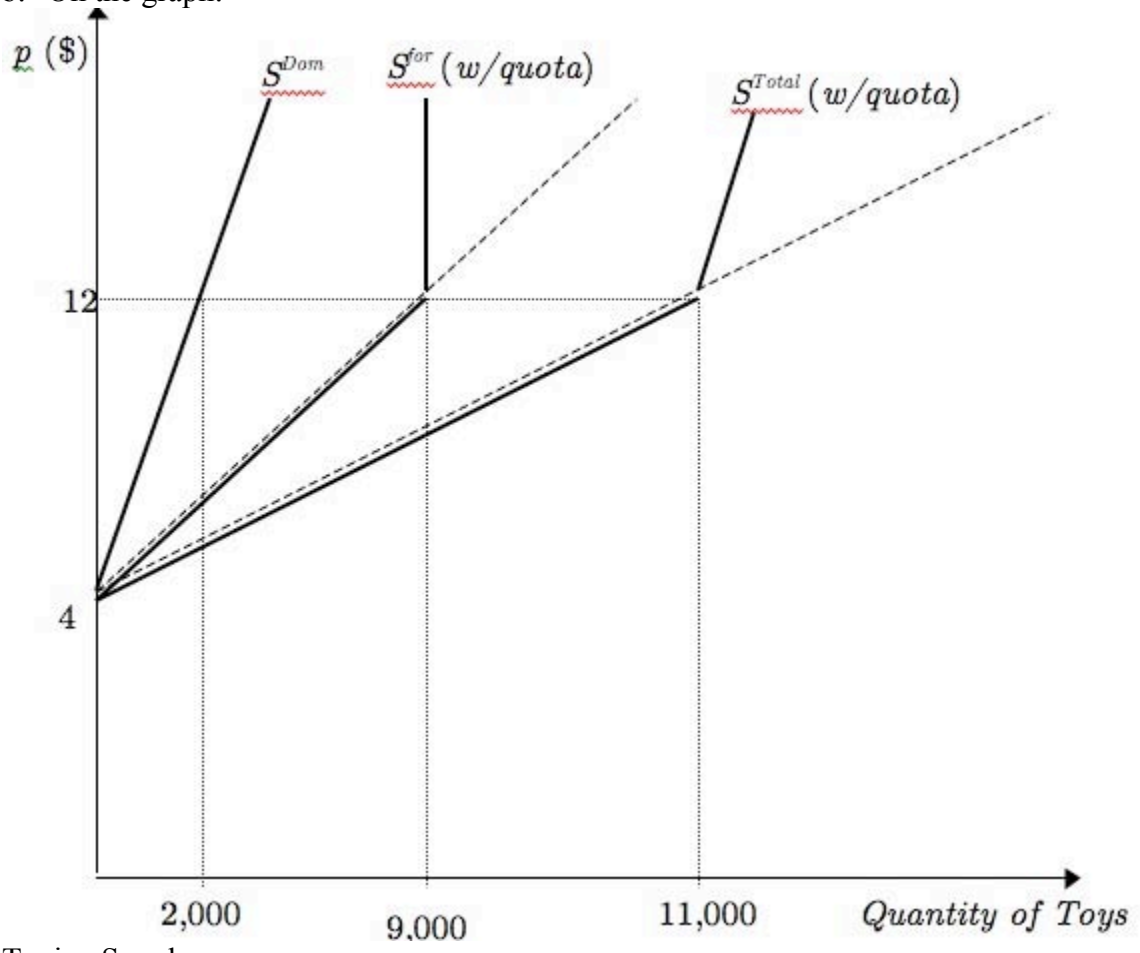
$Q^{Total} = Q^{For} + Q^{Dom} = 1{,}375p - 5{,}500$

To find the kink point, first find the price at which the quota restricts the foreign supply:

$9{,}000 = 1{,}125p - 4{,}500$

So $p = 12$

b. On the graph:



Topic: Supply

Skill: Analytical thinking

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17) The U.S. is planning on imposing quotas on tires imported from china. Domestic retailers predict this will result in an increase in consumer prices on tires by about $10. Use a supply and demand graph with brief explanation to show the effects of an import quota. Assume the quota is binding.
Answer: The restriction on imports will shift back the supply curve as less imports will be allowed into the country. This will raise the price and lower the quantity.
Topic: Supply
Skill: Application of knowledge
Status: Old

2.3 Market Equilibrium

1) Equilibrium is defined as a situation in which
A) neither buyers nor sellers want to change their behavior.
B) no government regulations exist.
C) demand curves are perfectly horizontal.
D) suppliers will supply any amount that buyers wish to buy.
Answer: A
Topic: Market Equilibrium
Skill: Analytical thinking
Status: Old

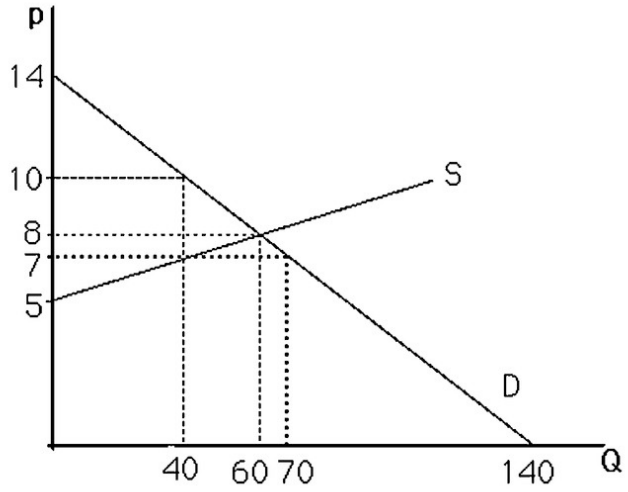
2) Once an equilibrium is achieved, it can persist indefinitely because
A) shocks that shift the demand curve or the supply curve cannot occur.
B) shocks to the demand curve are always exactly offset by shocks to the supply curve.
C) the government never intervenes in markets at equilibrium.
D) in the absence of supply/demand shocks no one applies pressure to change the price.
Answer: D
Topic: Market Equilibrium
Skill: Analytical thinking
Status: Old

3) If price is initially above the equilibrium level,
A) the supply curve will shift rightward.
B) the supply curve will shift leftward.
C) excess supply exists.
D) all firms can sell as much as they want.
Answer: C
Topic: Market Equilibrium
Skill: Analytical thinking
Status: Old

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4) A competitive equilibrium is described by
A) a price only.
B) a quantity only.
C) the excess supply minus the excess demand.
D) a price and a quantity.
Answer: D
Topic: Market Equilibrium
Skill: Analytical thinking
Status: Old



5) The above figure shows a graph of the market for pizzas in a large town. At a price of $10, there will be
A) no pizzas supplied.
B) equilibrium.
C) excess supply.
D) excess demand.
Answer: C
Topic: Market Equilibrium
Skill: Analytical thinking
Status: Revised

6) The above figure shows a graph of the market for pizzas in a large town. At a price of $7, there will be
A) excess demand.
B) excess supply.
C) equilibrium.
D) zero demand.
Answer: A
Topic: Market Equilibrium
Skill: Analytical thinking
Status: Revised

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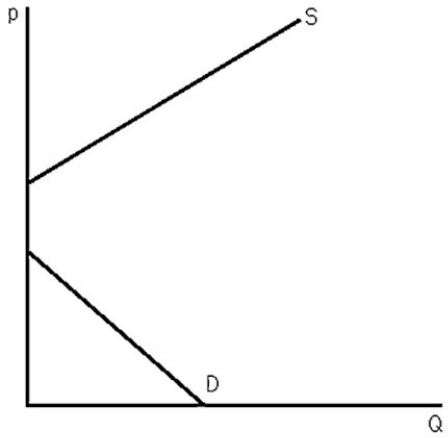
7) The above figure shows a graph of the market for pizzas in a large town. What are the equilibrium price and quantity?
A) p = 8, Q = 60
B) p = 60, Q = 8
C) p = 14, Q = 140
D) p = 5, Q = 60
Answer: A
Topic: Market Equilibrium
Skill: Analytical thinking
Status: Old

8) The above figure shows a graph of a market for pizzas in a large town. At a price of $7, what is the amount of excess demand?
A) 0; there is excess supply at $7.
B) 20 units
C) 30 units
D) 10 units
Answer: C
Topic: Market Equilibrium
Skill: Analytical thinking
Status: Old

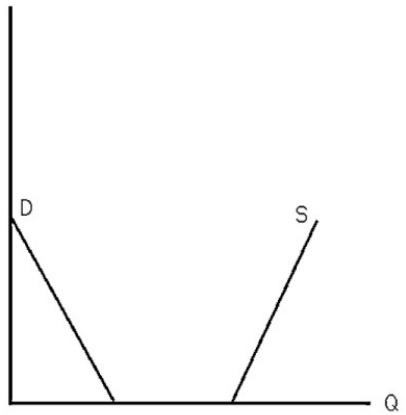
9) The above figure shows a graph of a market for pizzas in a large town. At a price of $10, the market
A) is not in equilibrium.
B) has excess supply.
C) does not have excess demand.
D) All of the above.
Answer: D
Topic: Market Equilibrium
Skill: Analytical thinking
Status: Old

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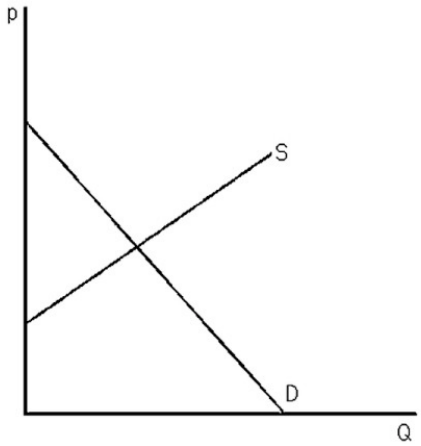
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Graph A



Graph B



Graph C

10) The above figure shows three different supply-and-demand graphs. Which graph best represents the market for vacations on Mars?
A) Graph A
B) Graph B
C) Graph C
D) None of the above
Answer: A
Topic: Market Equilibrium
Skill: Application of knowledge
Status: Old

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11) The above figure shows three different supply-and-demand graphs. Which graph best represents the market for workers at your nearest fast-food restaurant?
A) Graph A
B) Graph B
C) Graph C
D) None of the above
Answer: C
Topic: Market Equilibrium
Skill: Application of knowledge
Status: Old

12) The above figure shows three different supply-and-demand graphs. Which graph best represents the market for the air we are currently breathing?
A) Graph A
B) Graph B
C) Graph C
D) None of the above
Answer: B
Topic: Market Equilibrium
Skill: Application of knowledge
Status: Old

13) After tickets for a major sporting event are purchased at the official box office price, a market often develops whereby these tickets sell at prices well above the official box office price. Which of the following scenarios would NOT be able to explain this result?
A) The official price was below equilibrium from the moment the tickets were available.
B) Increased publicity causes the demand curve for the event to shift rightward.
C) The event was not a sellout.
D) Not everyone who wanted a ticket was able to buy one at the box office.
Answer: C
Topic: Market Equilibrium
Skill: Application of knowledge
Status: Old

For the following, please answer "True" or "False" and explain why.

14) When a market is in disequilibrium consumers and producers change their behavior. As a result the market reaches equilibrium.
Answer: True. For example, when a shortage exists at a given price, consumers bid up the price and firms increase production until the equilibrium is reached.
Topic: Market Equilibrium
Skill: Analytical thinking
Status: Old

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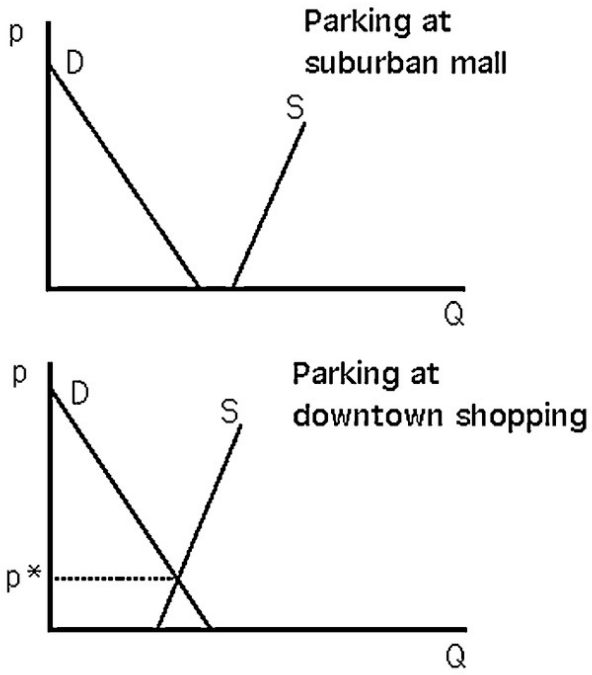
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15) Suppose the market for potatoes can be expressed as follows:

Supply: $Q^S = -20 + 10p$
Demand: $Q^D = 400 - 20p$

Solve for the equilibrium price and quantity.
Answer: Equate the RHS of the supply equation to the RHS of the demand equation:
$-20 + 10p = 400 - 20p$.
Rearrange: $30p = 420$ or $p = 14$. Plug this into either S or D to get Q: $Q = 400 - 20(14) = 120$.
Topic: Market Equilibrium
Skill: Analytical thinking
Status: Old

16) Use supply-and-demand graphs to explain why parking is free at the suburban shopping mall but one typically must pay to park when shopping downtown.
Answer:



See the above figure. At the suburban shopping mall, the only cars typically on the lot belong to shoppers and employees. Mall lots are usually built to be large enough to handle peak crowds. For the relevant quantities, the supply curve is horizontal at a price of zero. As a result, the quantity demanded never exceeds the amount that is provided freely. Downtown, shoppers compete with a larger quantity and greater variety of drivers for parking spaces. The quantity that is available freely is not enough to accommodate all of those who wish to park downtown.
Topic: Market Equilibrium
Skill: Analytical thinking
Status: Old

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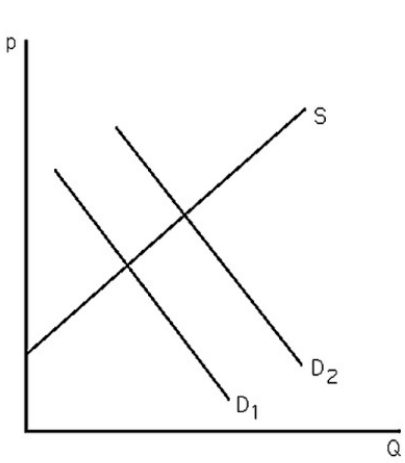
17) Explain why the equilibrium price is called the market clearing price.
Answer: At the equilibrium price, sellers want to sell the exact amount consumers want to buy. There is no excess demand or excess supply. The market is exactly cleared of all goods.
Topic: Market Equilibrium
Skill: Application of knowledge
Status: Old

2.4 Shocking the Equilibrium: Comparative Statics

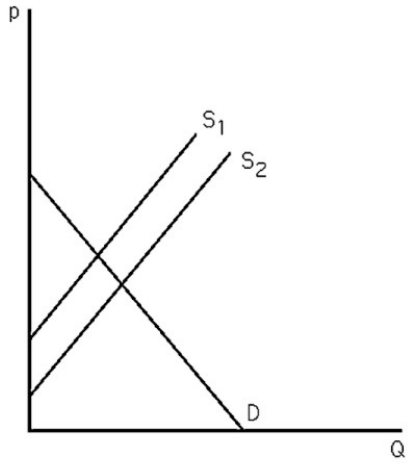
1) From the 1970s through the 1990s, the relative price of a college education has increased greatly. During the same time period, college enrollment has also increased. This evidence suggests that during this time period
A) the demand curve for a college education has shifted leftward.
B) the demand curve for a college education has shifted rightward.
C) the supply curve for a college education has shifted leftward.
D) the supply curve for a college education has shifted rightward.
Answer: B
Topic: Shocking the Equilibrium: Comparative Statics
Skill: Analytical thinking
Status: Old

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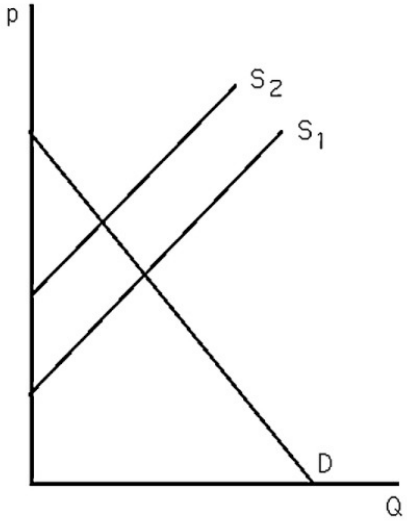
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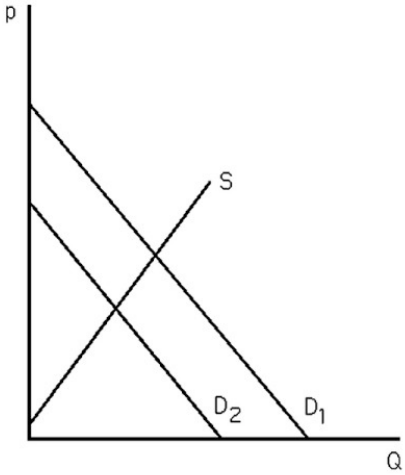
Graph A



Graph B



Graph C



Graph D

2) The above figure shows four different markets with changes in either the supply curve or the demand curve. Which graph best illustrates the market for coffee after severe weather destroys a large portion of the coffee crop?
A) Graph A
B) Graph B
C) Graph C
D) Graph D
Answer: C
Topic: Shocking the Equilibrium: Comparative Statics
Skill: Analytical thinking
Status: Old

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3) The above figure shows four different markets with changes in either the supply curve or the demand curve. Which graph best illustrates the market for tea after severe weather destroys a large portion of the coffee crop?
A) Graph A
B) Graph B
C) Graph C
D) Graph D
Answer: A
Topic: Shocking the Equilibrium: Comparative Statics
Skill: Analytical thinking
Status: Old

4) The above figure shows four different markets with changes in either the supply curve or the demand curve. Which graph best illustrates the market for non-dairy coffee creamer after severe weather destroys a large portion of the coffee crop?
A) Graph A
B) Graph B
C) Graph C
D) Graph D
Answer: D
Topic: Shocking the Equilibrium: Comparative Statics
Skill: Analytical thinking
Status: Old

5) The above figure shows four different markets with changes in either the supply curve or the demand curve. Which graph best illustrates the market for computers after technological advances in making computers occur?
A) Graph A
B) Graph B
C) Graph C
D) Graph D
Answer: B
Topic: Shocking the Equilibrium: Comparative Statics
Skill: Analytical thinking
Status: Old

6) The above figure shows four different markets with changes in either the supply curve or the demand curve. Which graph best illustrates the market for computer manuals after technological advances in making computers occur?
A) Graph A
B) Graph B
C) Graph C
D) Graph D
Answer: A
Topic: Shocking the Equilibrium: Comparative Statics
Skill: Analytical thinking
Status: Old

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7) The above figure shows four different markets with changes in either the supply curve or the demand curve. Which graph best illustrates the market for typewriters after technological advances in computerized word-processing software occur?
A) Graph A
B) Graph B
C) Graph C
D) Graph D
Answer: D
Topic: Shocking the Equilibrium: Comparative Statics
Skill: Analytical thinking
Status: Old

8) Suppose a market were currently at equilibrium. A rightward shift of the demand curve would cause
A) an increase in price but a decrease in quantity.
B) a decrease in price but an increase in quantity.
C) an increase in both price and quantity.
D) a decrease in both price and quantity.
Answer: C
Topic: Shocking the Equilibrium: Comparative Statics
Skill: Analytical thinking
Status: Old

9) Suppose a market were currently at equilibrium. A rightward shift of the supply curve would cause a(n)
A) increase in price but a decrease in quantity.
B) decrease in price but an increase in quantity.
C) increase in both price and quantity.
D) decrease in both price and quantity.
Answer: B
Topic: Shocking the Equilibrium: Comparative Statics
Skill: Analytical thinking
Status: Old

10) A rightward shift of the demand curve will lead to an
A) increase in equilibrium price.
B) excess demand at the old equilibrium price.
C) increase in quantity supplied.
D) All of the above.
Answer: D
Topic: Shocking the Equilibrium: Comparative Statics
Skill: Analytical thinking
Status: Old

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11) A rightward shift of the supply curve will lead to a(n)
A) decrease in equilibrium price.
B) excess supply at the old equilibrium price.
C) increase in quantity demanded.
D) All of the above.
Answer: D
Topic: Shocking the Equilibrium: Comparative Statics
Skill: Analytical thinking
Status: Old

12) If the demand curve is vertical a rightward shift of the supply curve will lead to
A) an increase in quantity supplied.
B) an increase in quantity demanded.
C) a decrease in quantity demanded.
D) a decrease in price.
Answer: D
Topic: Shocking the Equilibrium: Comparative Statics
Skill: Analytical thinking
Status: Revised

13) When import restrictions are placed on a good, and as a result the price of the good increases, the demand curve for that good will
A) shift rightward.
B) shift leftward.
C) become steeper.
D) be unaffected.
Answer: D
Topic: Shocking the Equilibrium: Comparative Statics
Skill: Analytical thinking
Status: Old

14) When two goods are substitutes, a shock that raises the price of one good causes the price of the other good to
A) remain unchanged.
B) decrease.
C) increase.
D) change in an unpredictable manner.
Answer: C
Topic: Shocking the Equilibrium: Comparative Statics
Skill: Analytical thinking
Status: Old

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15) A drought in the Midwest will raise the price of wheat because of a
A) leftward shift in the supply curve.
B) rightward shift in the supply curve.
C) leftward shift in the demand curve.
D) rightward shift in the demand curve.
Answer: A
Topic: Shocking the Equilibrium: Comparative Statics
Skill: Analytical thinking
Status: Old

16) If pizza and tacos are substitutes, a decrease in the price of tacos would lead to a
A) decrease in the demand curve for pizza.
B) decrease in the quantity demanded of pizza.
C) decrease in the price of pizza.
D) All of the above.
Answer: D
Topic: Shocking the Equilibrium: Comparative Statics
Skill: Analytical thinking
Status: Old

17) The supply and demand for wheat is given by $Q_S = 200 + .2A + p$ and $Q_D = 500 - p$, where p is the price of wheat and A is the amount of rainfall (inches per year). The effect of an incremental increase in rainfall on equilibrium will be
A) a decrease the price of wheat by 10¢.
B) a decrease the price of wheat by 20¢.
C) an increase in the price of wheat by 20¢.
D) an increase in the price of wheat by 10¢.
Answer: A
Topic: Shocking the Equilibrium: Comparative Statics
Skill: Analytical thinking
Status: Old

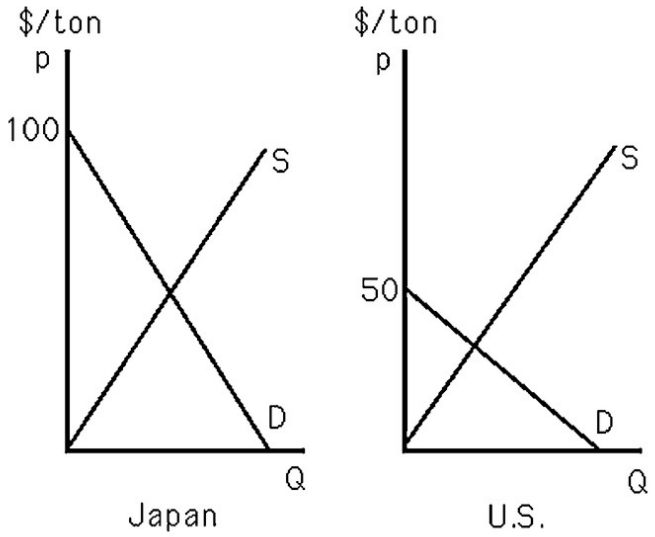
18) The change in price that results from a leftward shift of the supply curve will be greater if
A) the demand curve is relatively steep than if the demand curve is relatively flat.
B) the demand curve is relatively flat than if the demand curve is relatively steep.
C) the demand curve is horizontal than if the demand curve is vertical.
D) the demand curve is horizontal than if the demand curve is downward sloping.
Answer: A
Topic: Shocking the Equilibrium: Comparative Statics
Skill: Analytical thinking
Status: Old

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19) The change in price that results from a rightward shift in demand will be greater if
A) the supply curve is horizontal than if the supply curve is upward sloping.
B) the supply curve is relatively steep than if the supply curve is relatively flat.
C) the supply curve is upward sloping than if the supply curve is vertical.
D) the supply curve is horizontal than if the supply curve is vertical.
Answer: B
Topic: Shocking the Equilibrium: Comparative Statics
Skill: Analytical thinking
Status: Old

20) If the demand curve for a good is horizontal and the price is positive, then a leftward shift of the supply curve results in
A) a price of zero.
B) an increase in price.
C) a decrease in price.
D) no change in price.
Answer: D
Topic: Shocking the Equilibrium: Comparative Statics
Skill: Analytical thinking
Status: Old



21) The above figure shows the supply and demand curves for rice in the U.S. and Japan. Assume there is no trade between the two countries. If bad weather causes the supply curves in each country to shift leftward by the same amount, then
A) the price will increase in both countries.
B) the price will decrease in both countries.
C) the change in price cannot be determined.
D) None of the above.
Answer: A
Topic: Shocking the Equilibrium: Comparative Statics
Skill: Analytical thinking
Status: Old

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22) The above figure shows the supply and demand curves for rice in the U.S. and in Japan. Assume there is no trade between the two countries. If bad weather causes the supply curves in each country to shift leftward by the same amount, then
A) the price will increase the same amount in both countries.
B) the price will decrease the same amount in both countries.
C) the price will increase more in Japan than in the U.S.
D) the price will decrease more in Japan than in the U.S.
Answer: C
Topic: Shocking the Equilibrium: Comparative Statics
Skill: Analytical thinking
Status: Old

23) The above figure shows the supply and demand curves for rice in the U.S. and in Japan. Assume there is no trade between the two countries. If fertilizer price drop causes the supply curves in both countries to shift rightward by the same amount, then
A) the quantity will increase the same amount in both counties.
B) the quantity will decrease the same amount in both countries.
C) the quantity will increase more in Japan than in the U.S.
D) the quantity will increase more in the U.S. than in Japan.
Answer: D
Topic: Shocking the Equilibrium: Comparative Statics
Skill: Analytical thinking
Status: Old

24) A vertical demand curve results in
A) no change in quantity when the supply curve shifts.
B) no change in price when the supply curve shifts.
C) no change in the supply curve being possible.
D) no change in quantity when the demand curve shifts.
Answer: A
Topic: Shocking the Equilibrium: Comparative Statics
Skill: Analytical thinking
Status: Old

25) A vertical demand curve for a particular good implies that consumers are
A) sensitive to changes in the price of that good.
B) not sensitive to changes in the price of that good.
C) irrational.
D) not interested in that good.
Answer: B
Topic: Shocking the Equilibrium: Comparative Statics
Skill: Analytical thinking
Status: Old

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26) Consider the following products. Which of them has the flattest demand curve?
A) insulin
B) alcohol
C) cigarettes
D) butter
Answer: D
Topic: Shocking the Equilibrium: Comparative Statics
Skill: Application of knowledge
Status: Old

27) If the supply curve of cigarettes shifts to the left, quantity demanded for cigarettes
A) will decrease substantially.
B) will increase substantially.
C) will slightly increase.
D) will slightly decrease.
Answer: D
Topic: Shocking the Equilibrium: Comparative Statics
Skill: Analytical thinking
Status: Old

For the following, please answer "True" or "False" and explain why.

28) During a mild winter, the price of home heating oil is expected to be less than it would be during a normal winter.
Answer: True. During a mild winter, people do not need to operate their furnace as often as in a normal winter. The demand for home heating oil lies to the left of where it would be under normal weather conditions. As a result, the price of oil falls.
Topic: Shocking the Equilibrium: Comparative Statics
Skill: Application of knowledge
Status: Old

29) Suppose the demand for widgets is given by $Q_D = 100 - 5p - p_d + 2Y$, where Y is average consumer income, p is the price of lemons, and p_d is the price of doodads. According to this equation, widgets are an inferior good.
Answer: False. As income increases, because of the positive coefficient (+2) for income, demand will increase. This indicates widgets are normal.
Topic: Shocking the Equilibrium: Comparative Statics
Skill: Analytical thinking
Status: Old

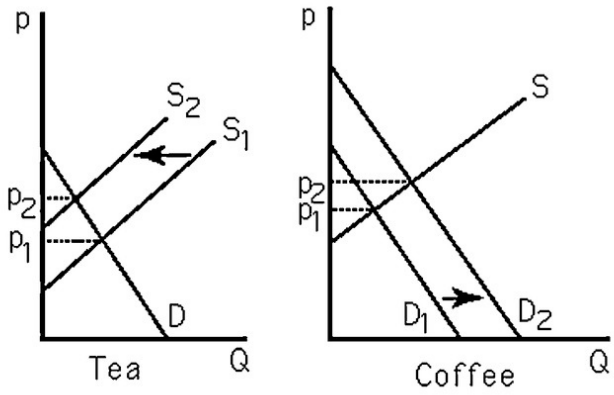
30) As the supply curve shifts to the right, the increase in quantity demanded will not depend on the shape of the demand curve.
Answer: False. The flatter the demand curve, the larger the quantity reaction.
Topic: Shocking the Equilibrium: Comparative Statics
Skill: Analytical thinking
Status: Old

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31) Explain why the shape of the demand curve will determine the how a shock to the market equilibrium affect price and quantity.
Answer: A flatter demand curve has a smaller slope in absolute value. That means that consumers are more sensitive to price changes. Therefore, a change in price will cause a large reaction in quantity demanded.
Topic: Shocking the Equilibrium: Comparative Statics
Skill: Written and oral communication
Status: Old

32) What happens to the equilibrium price and quantity of coffee when there is a leftward shift of the supply curve for tea? Explain.
Answer:

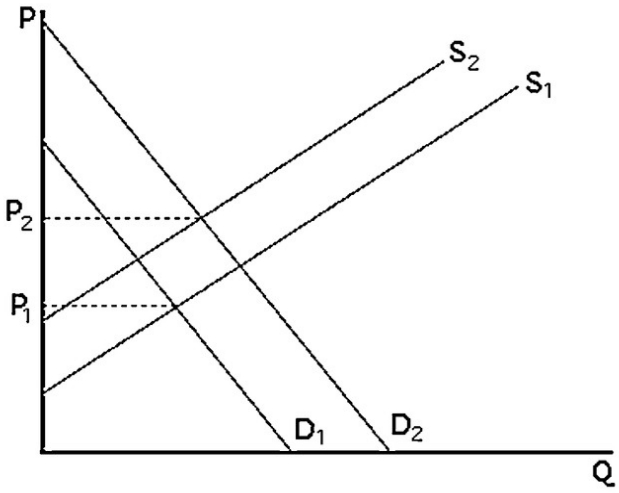


See the above figure. The leftward shift in the supply of tea causes tea prices to increase. Since coffee and tea are substitutes, the demand for coffee increases, resulting in higher coffee prices.
Topic: Shocking the Equilibrium: Comparative Statics
Skill: Analytical thinking
Status: Old

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33) Suppose there is a linear downward-sloping demand curve and a linear upward-sloping supply curve for a good. The price of a substitute good increases and the price of an input to production also increases. Graph the original demand and supply curves, and the curves after the substitute good and input prices increase. How will the equilibrium price change after the substitute and input prices increase?
Answer:

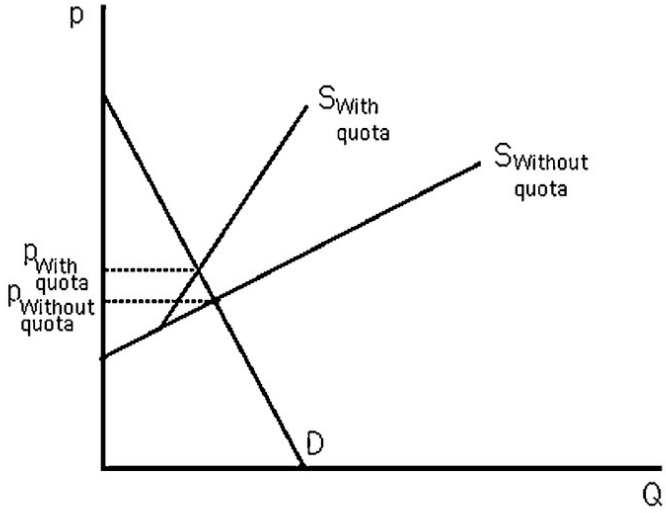


See the above figure. The new demand curve will be to the right of the original demand curve and the new supply curve will be to the left of the original supply curve. The equilibrium price will increase. The change in equilibrium quantity cannot be determined and will depend on the relative magnitude of the supply and demand shifts.
Topic: Shocking the Equilibrium: Comparative Statics
Skill: Analytical thinking
Status: Old

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34) Use a supply-and-demand graph to predict what happens to sheet steel prices in the United States after quotas on Japanese and European sheet steel expire.
Answer:



See the above figure. The quota-restricted supply results in a higher price than the market equilibrium. When the quotas expire, the Japanese and European steel firms export into the United States based upon their own supply curves. The new equilibrium will be at a lower price.
Topic: Shocking the Equilibrium: Comparative Statics
Skill: Analytical thinking
Status: Old

35) Suppose that the supply and demand of wheat depend on the price of wheat (p), the amount of annual rainfall (r), and the level of disposable consumer income (I). The equations describing the supply and demand curves are given by:

$$Q_S = 20r + 100p$$
$$Q_D = 4000 - 100p + 10I$$

Sketch a graph of the supply and demand curves for wheat and show the effects of an increase in the quantity of rainfall. How does each curve shift (if at all) from the increase in rainfall? What does this shift do to the equilibrium price and quantity (increase/decrease)?
Answer: An increase in rainfall will shift the supply curve to the right (increase in supply). A change in rainfall does not change the demand curve (r does not appear in the equation). This will increase the equilibrium quantity and decrease the equilibrium price.
Topic: Shocking the Equilibrium: Comparative Statics
Skill: Application of knowledge
Status: Old

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36) Using the supply and demand curve for wheat above, sketch the supply and demand curves demonstrating the effect of an increase in disposable consumer incomes. How does each curve shift (if at all) to the increase in income? What does the shift do to equilibrium price and quantity?
Answer: An increase in *I* will increase the demand for wheat (shift to the right). This increases equilibrium price and increases equilibrium quantity.
Topic: Shocking the Equilibrium: Comparative Statics
Skill: Analytical thinking
Status: Old

37) Using the supply and demand equations for wheat, solve for the equilibrium price and quantity as functions of *I* and *r*.
Answer:
Setting $Q_S = Q_D$ we get:

$$20r + 100p = 4000 - 100p + 10I$$

Solving for equilibrium price:

$$p = 20 + .05I - .1r$$

Plug this into either supply or demand to find equilibrium quantity

$$Q = 2000 + 5I + 10r$$

Topic: Shocking the Equilibrium: Comparative Statics
Skill: Analytical thinking
Status: Old

38) Using the supply and demand equations for wheat above, determine how the equilibrium price and quantity vary with an increase in rainfall(*r*) holding other factors that influence supply and demand fixed. How do the equilibrium price and quantity change with an increase in income(*I*). Answer this comparative statics question using calculus.
Answer: The partial derivatives of the equilibrium price and quantity with respect to *r*:

$$\partial p/\partial r = -.1$$

$$\partial Q/\partial r = 10$$

An incremental increase in rainfall will decrease price by $.10 and increase quantity by 10 units of wheat.
The partial derivatives of the equilibrium price and quantity with respect to *I*:

$$\partial p/\partial I = -.05$$

$$\partial Q/\partial I = 5$$

An incremental increase in consumer disposable income will decrease price by $.05 and increase quantity of wheat by five units.
Topic: Shocking the Equilibrium: Comparative Statics
Skill: Analytical thinking
Status: Old

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39) The local lemon market has the following supply and demand relationships:

$Q_D = 100 - 5p - p_O + 2I$

$Q_S = 4p$

where p is the price of lemons (per pound), Q is the quantity of lemons in pounds, I is the average consumer income, and p_O is the price per pound of oranges. Derive the equilibrium price and quantity of lemons as functions of the price of oranges and average consumer income. Use the calculus method of comparative statics to compute the effects of income and the price of oranges on the equilibrium price and quantity of lemons.

Answer:

Find equilibrium price by setting supply and demand equal:

$100 - 5p - p_O + 2I = 4p$

Solving for p:

$p = 11.11 - .11p_O + .22I$

To find Q, plug the equilibrium price into either supply or demand:

$Q = 44.44 - .44p_O + .89I$

The comparative statics w.r.t. the price of oranges are:

$\partial p/\partial p_O = -.11$

$\partial Q/\partial p_O = -.44$

The comparative statics with respect to income are:

$\partial p/\partial I = .22$

$\partial Q/\partial I = .89$

Topic: Shocking the Equilibrium: Comparative Statics

Skill: Analytical thinking

Status: Old

40) The demand curve for Widgets is given by

$Q_D = 5800 - 200p + 30p_G$

where Q_D is the quantity of widgets demanded, y is the per capita income and p_G is the price of Gizmos. The supply of Widgets is given by:

$Q_S = 250p - 1250$

a. Solve for the equilibrium price and quantity of widgets in terms of the price of Gizmos.

b. Compute the comparative static derivatives for the changes in the equilibrium price and quantity of Widgets with respect to a change in the price of Gizmos.

Answer:

a. Set quantity demand equal to quantity supply to find price:

$5800 - 200p + 30p_G = 250p - 1250$

Solving, $p^* = (6050 + 30p_G)/450$

Substitute into demand or supply to find quantity:

$Q^* = 250(6050 + 30p_G)/450 - 1250$

b. $dQ^*/dp_G = 15/9$ and $dp^*/dp_G = 1/15$

Topic: Shocking the Equilibrium: Comparative Statics

Skill: Analytical thinking

Status: Old

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41) The supply and demand for wheat are given by

$Q_S = 20 + 100p$

$Q_D = 4000 - 100p + 10Y$

Where Y is the average consumer income.

a. Compute the partial derivative of quantity demand with respect to changes in average consumer income.

b. Solve for the equilibrium price and quantity as functions of the consumer income.

c. Compute the derivatives of the equilibrium price and quantity with respect to income.

Answer:

a. 10

b. $200p = 3980 + 10Y$

$p^*(Y) = 19.9 + 0.05Y$

$Q^*(Y) = 2010 + 5Y$

c. $dp^*/dY = 1/20$

$dQ^*/dY = 5$

Both are positive, indicating the equilibrium price and quantity rises with income.

Topic: Shocking the Equilibrium: Comparative Statics

Skill: Analytical thinking

Status: Old

2.5 Elasticities

1) The percentage change in the quantity demanded in response to a percentage change in the price is known as the

A) slope of the demand curve.

B) excess demand.

C) price elasticity of demand.

D) All of the above.

Answer: C

Topic: Elasticities

Skill: Analytical thinking

Status: Old

2) Suppose the inverse demand curve for a good is expressed as Q = 50 - 2p. If the good currently sells for $3, then the price elasticity of demand is

A) -3 ∗ (2/50).

B) -2 ∗ (50/3).

C) -2 ∗ (3/44).

D) -3 ∗ (44/2).

Answer: C

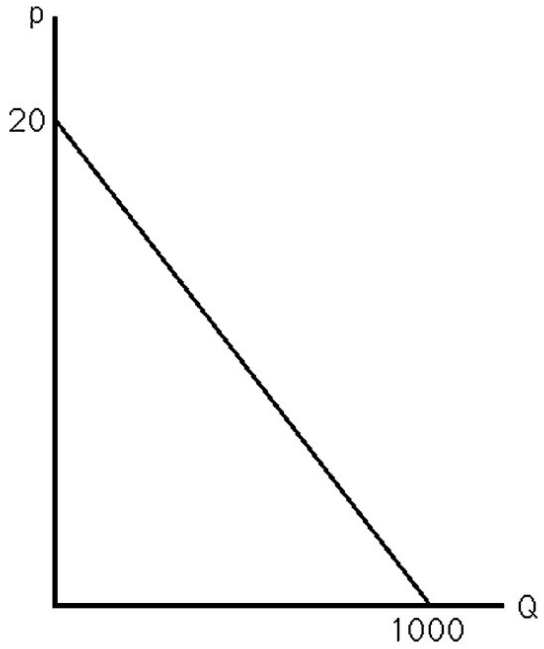
Topic: Elasticities

Skill: Analytical thinking

Status: Old

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3) The above figure shows the demand curve for crude oil. If the market price is $10 a barrel, what is the price elasticity of demand?
A) -.02
B) -1
C) -10
D) -500
Answer: B
Topic: Elasticities
Skill: Analytical thinking
Status: Old

4) The above figure shows the demand curve for crude oil. The demand curve has unitary price elasticity when price equals
A) $0.
B) $1.
C) $10.
D) $20.
Answer: C
Topic: Elasticities
Skill: Analytical thinking
Status: Old

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5) Suppose the demand function for a good is expressed as Q = 100 - 4p. If the good currently sells for $10, then the price elasticity of demand equals
A) -1.5.
B) -0.67.
C) -4.
D) -2.5.
Answer: B
Topic: Elasticities
Skill: Analytical thinking
Status: Old

6) If an increase in income results in a rightward parallel shift of the demand curve, then at any given price, the price elasticity of demand will have
A) increased in absolute terms.
B) decreased in absolute terms.
C) remained unchanged.
D) increased, decreased or stayed the same. It cannot be determined.
Answer: B
Topic: Elasticities
Skill: Analytical thinking
Status: Old

7) If the demand function for orange juice is expressed as Q = 2000 - 500p, where Q is quantity in gallons and p is price per gallon measured in dollars, then the demand for orange juice has a unitary elasticity when price equals
A) $0.
B) $1.
C) $2.
D) $4.
Answer: C
Topic: Elasticities
Skill: Analytical thinking
Status: Old

8) If the demand curve for orange juice is expressed as Q = 2000 - 500p, where Q is measured in gallons and p is measured in dollars, then at the price of $3, elasticity equals
A) -0.33.
B) -3.
C) -9.
D) -17.
Answer: B
Topic: Elasticities
Skill: Analytical thinking
Status: Old

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9) If the demand for orange juice is expressed as Q = 2000 - 500p, where Q is measured in gallons and p is measured in dollars, then at the price of $3, the demand curve
A) is elastic.
B) has a unitary elasticity.
C) is inelastic.
D) is perfectly inelastic.
Answer: A
Topic: Elasticities
Skill: Analytical thinking
Status: Old

10) If the demand curve for comic books is expressed as Q = 10,000/p, then demand has a unitary elasticity
A) only when p = 10,000.
B) only when p = 100.
C) always.
D) never.
Answer: C
Topic: Elasticities
Skill: Analytical thinking
Status: Old

11) If the demand curve for a good always has unitary price elasticity, what does this imply about consumer behavior?
A) Consumers do not react to a price change.
B) Consumers will spend a constant total amount on the good.
C) Consumers are irrational.
D) Consumers do not obey the Law of Demand.
Answer: B
Topic: Elasticities
Skill: Analytical thinking
Status: Old

12) If the price elasticity of demand for a good is greater than one in absolute terms, we say that demand is
A) elastic.
B) inelastic.
C) perfect.
D) vertical.
Answer: A
Topic: Elasticities
Skill: Analytical thinking
Status: Old

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13) If the price elasticity of demand for a good is less than one in absolute terms, we say consumers of this good
A) are not very sensitive to price.
B) are not very sensitive to the quantity they demand.
C) are very sensitive to price.
D) are elastic.
Answer: A
Topic: Elasticities
Skill: Analytical thinking
Status: Old

14) If the price of orange juice rises 10%, and as a result the quantity demanded falls by 8%, the price elasticity of demand for orange juice is
A) -1.25.
B) inelastic.
C) Both A and B above.
D) Neither A nor B above.
Answer: B
Topic: Elasticities
Skill: Analytical thinking
Status: Old

15) If the price of orange juice rises 10%, and as a result the quantity demanded falls by 8%, the price elasticity of demand for orange juice is
A) -1.25.
B) elastic.
C) Both A and B above.
D) Neither A nor B above.
Answer: D
Topic: Elasticities
Skill: Analytical thinking
Status: Old

16) If the price of orange juice rises 10%, and as a result the quantity demanded falls by 8%, the price elasticity of demand for orange juice is
A) -1.25.
B) -80.0.
C) -0.80.
D) -10.0.
Answer: C
Topic: Elasticities
Skill: Analytical thinking
Status: Old

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17) If the price of orange juice rises 10%, and as a result the quantity demanded falls by 10%, then one can conclude that the demand for orange juice
A) is perfectly elastic.
B) is inelastic.
C) has a unitary elasticity.
D) has a constant elasticity.
Answer: C
Topic: Elasticities
Skill: Analytical thinking
Status: Old

18) A horizontal demand curve for a good could arise because consumers
A) are irrational.
B) are not sensitive to price changes.
C) view this good as identical to another good.
D) have no equivalent substitutes for this good.
Answer: C
Topic: Elasticities
Skill: Analytical thinking
Status: Old

19) Which of the following is most likely to be TRUE?
A) Income elasticity of demand for fur coats exceeds that of oatmeal.
B) Income elasticity of demand for oatmeal exceeds that of fur coats.
C) Income elasticity of demand for fur coats equals that of oatmeal.
D) It is not possible to make any prediction about relative income elasticities.
Answer: A
Topic: Elasticities
Skill: Analytical thinking
Status: Old

20) If a consumer doubles her quantity of ice cream consumed when her income rises by 25%, then her income elasticity of demand for ice cream is
A) 8.0.
B) 4.0.
C) .25.
D) .08.
Answer: B
Topic: Elasticities
Skill: Analytical thinking
Status: Old

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21) If a good has an income elasticity of demand greater than one, one might classify that good as
A) a necessity.
B) a luxury.
C) unusual.
D) inelastic.
Answer: B
Topic: Elasticities
Skill: Analytical thinking
Status: Old

22) The price for tickets of a sold-out event increase by 30% but quantity sold remains unchanged. The price elasticity of demand equals
A) 0.
B) 1.
C) infinity.
D) Cannot be determined.
Answer: D
Topic: Elasticities
Skill: Analytical thinking
Status: Revised

23) The market demand for wheat is $Q = 100 - 2p + 1p_b$, where p_b is the price of barley. If the price of wheat is $2, the price elasticity of demand
A) equals (-4/46).
B) equals (-46).
C) equals (-1).
D) cannot be calculated without more information.
Answer: D
Topic: Elasticities
Skill: Analytical thinking
Status: Old

24) How will a decrease in price affect a firm's revenues?
A) It depends on the price elasticity of demand.
B) Revenues will stay the same.
C) Revenues will decrease.
D) Revenues will increase.
Answer: A
Topic: Elasticities
Skill: Analytical thinking
Status: Old

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25) The cross price elasticity of demand for a good is the percentage change in the quantity demanded in response to a given percentage change in
A) income.
B) the price of that good.
C) the price of another good.
D) the quantity demanded of another good.
Answer: C
Topic: Elasticities
Skill: Analytical thinking
Status: Old

26) The market demand for wheat is $Q = 100 - 2p + 1p_b$, where p_b is the price of barley. The cross price elasticity of demand for wheat with respect to barley
A) cannot be calculated from just the information provided.
B) is negative.
C) suggests that wheat and barley are complements.
D) equals 1.
Answer: A
Topic: Elasticities
Skill: Analytical thinking
Status: Old

27) The market demand for wheat is $Q = 100 - 2p + 1p_b + 2Y$. If the price of wheat, p, is \$2, and the price of barley, p_b, is \$3, and income, Y, is \$1000, the income elasticity of wheat is
A) $2 * (1000/2099)$.
B) 2.
C) $1/2 * (1000/2099)$.
D) Cannot be calculated from the information provided.
Answer: A
Topic: Elasticities
Skill: Analytical thinking
Status: Old

28) The cross price elasticity of demand between two goods will be positive if
A) the two goods are complements.
B) the two goods are substitutes.
C) the two goods are luxuries.
D) one of the goods is a luxury and the other is a necessity.
Answer: B
Topic: Elasticities
Skill: Analytical thinking
Status: Old

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29) The percentage change in the quantity supplied in response to a percentage change in the price is known as the
A) slope of the supply curve.
B) excess supply.
C) price elasticity of supply.
D) All of the above.
Answer: C
Topic: Elasticities
Skill: Analytical thinking
Status: Old

30) The supply curve for tickets for a sporting event
A) is perfectly inelastic.
B) is vertical.
C) has a price elasticity of zero.
D) All of the above.
Answer: D
Topic: Elasticities
Skill: Analytical thinking
Status: Old

31) As prices change, the elasticity of supply describes the movement
A) of a shift in the supply curve.
B) of the equilibrium price.
C) along the supply curve.
D) from a necessity to a luxury good.
Answer: C
Topic: Elasticities
Skill: Analytical thinking
Status: Old

32) In the late 1980s, the health benefits of oat bran were widely advertised. If the price of oats increased 50%, causing the quantity of oats supplied to increase by 40%, then the price elasticity of supply was
A) 1.25.
B) -1.25.
C) -0.80.
D) 0.80.
Answer: D
Topic: Elasticities
Skill: Analytical thinking
Status: Old

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33) If the supply curve for orange juice is estimated to be Q = 40 + 2p, then, at a price of $2, the price elasticity of supply is
A) .01.
B) .09.
C) 1.
D) 11.
Answer: B
Topic: Elasticities
Skill: Analytical thinking
Status: Old

34) If the supply curve for orange juice is estimated to be Q = 40 + 2p, then
A) supply is price elastic at all prices.
B) supply is price inelastic at all prices.
C) supply is elastic only at prices below 20.
D) No general statements about price elasticity of supply can be made.
Answer: B
Topic: Elasticities
Skill: Analytical thinking
Status: Old

35) When it comes to the supply curve of janitors and accountants,
A) the supply curve of janitors is more elastic.
B) the supply curve of accountants is more elastic.
C) both supply curves are equally elastic.
D) More information is needed.
Answer: A
Topic: Elasticities
Skill: Analytical thinking
Status: Old

36) The supply of movie tickets at one theater's box office for this Saturday's 4:30 showing of a new movie is
A) perfectly elastic until all seats are filled.
B) unit elastic.
C) perfectly inelastic.
D) elastic.
Answer: C
Topic: Elasticities
Skill: Analytical thinking
Status: Old

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37) A vertical supply curve exhibits
A) a constant elasticity of supply.
B) a perfectly inelastic supply curve.
C) Both A and B are true.
D) None of the above.
Answer: C
Topic: Elasticities
Skill: Analytical thinking
Status: Old

38) A given supply curve has a zero intercept. At the current equilibrium price the price elasticity of supply equals
A) 1.
B) 0.
C) 2.
D) Not enough information is provided.
Answer: D
Topic: Elasticities
Skill: Analytical thinking
Status: Revised

39) The price elasticity of supply when the supply curve is Q = 5 is
A) 5.
B) perfectly inelastic.
C) perfectly elastic.
D) Cannot be calculated from the information provided.
Answer: B
Topic: Elasticities
Skill: Analytical thinking
Status: Old

40) If demand is given by $Q = Ap^{-b}$ where A and b are positive constants, the absolute value of price elasticity of demand
A) = b.
B) = A.
C) = A/b.
D) depends on the price.
Answer: A
Topic: Elasticities
Skill: Analytical thinking
Status: Old

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41) The duration of the "short-run"
A) is one year.
B) is the same for all goods.
C) depends on the relative short-run elasticity of demand and supply for the good.
D) depends on how long it takes consumers or firms to adjust for a particular good.
Answer: D
Topic: Elasticities
Skill: Analytical thinking
Status: Old

42) Electricity accounts for almost 20% of the cost of making steel. A 10% increase in electricity prices results in steel firms decreasing production and thereby demanding 5% less electricity. Over many years, technological innovations can change the way steel firms make steel and reduce the industry's energy requirements. This suggests that the steel industry's short-run elasticity of demand for electricity is probably
A) less than one in absolute terms in the short run.
B) less than its long-run elasticity of demand for electricity.
C) Both A and B above.
D) Neither A nor B above.
Answer: C
Topic: Elasticities
Skill: Application of knowledge
Status: Old

43) Why is the supply of oil more price elastic in the long run?
A) New deposits are found.
B) Better extraction technology.
C) Ability of firms to change the amount of all inputs.
D) All of the above.
Answer: D
Topic: Elasticities
Skill: Analytical thinking
Status: Old

44) In the mid-1980s, the salaries of accounting professors with Ph.D.s increased dramatically. This resulted in an increase in enrollments in Ph.D. accounting programs. Since a Ph.D. degree in accounting may take at least four years to complete, the short-run elasticity of supply of accounting professors is
A) greater than the long-run-elasticity of supply.
B) less than the long-run elasticity of supply.
C) equal to the long-run elasticity of supply.
D) equal to the short-run elasticity of demand.
Answer: B
Topic: Elasticities
Skill: Application of knowledge
Status: Old

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45) The rising price of oil has made it feasible to extract oil out of oily sand in Canada. Concerning the oil market, this is an example of
A) a higher price elasticity of supply in the long run.
B) a higher price elasticity of supply in the short run.
C) a higher price elasticity of demand in the short run.
D) an inelastic long-run supply of oil.
Answer: A
Topic: Elasticities
Skill: Application of knowledge
Status: Old

46) Which of the following goods probably has the lowest (absolute value) short-run price elasticity of demand?
A) fresh fruit
B) frozen dinners
C) cars
D) refrigerators
Answer: A
Topic: Elasticities
Skill: Analytical thinking
Status: Old

47) The short-run elasticity of supply is less than the long-run elasticity of supply
A) because consumers' tastes and preferences change in the long run but not in the short run.
B) because producers can adjust the amount of machinery in the long run but not in the short run.
C) only for durable goods.
D) only for non-durable goods.
Answer: B
Topic: Elasticities
Skill: Analytical thinking
Status: Old

48) Relative to the short-run demand for gasoline, the long-run demand for gasoline is
A) probably more elastic since people need time to change automobiles and driving habits.
B) probably less elastic since people need time to change automobiles and driving habits.
C) probably more elastic because people can hoard this good.
D) probably less elastic because people cannot store this good.
Answer: A
Topic: Elasticities
Skill: Application of knowledge
Status: Old

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49) The demand equation $Q = .5p^{-.75}$ is equivalent to the log-linear demand equations
A) $Q = \ln(.5) - .75\ln(p)$
B) $\ln(Q) = \ln(.5) - .75\ln(p)$
C) $\ln(Q) = .5 - .75\ln(p)$
D) $\ln(Q) = \ln(.75) - .5\ln(p)$
Answer: B
Topic: Elasticities
Skill: Analytical thinking
Status: Old

50) If price of product A increases by 10%, and the quantity demanded for product B drops by 50%, then these two products are
A) substitutes.
B) complements.
C) normal goods.
D) inferior goods.
Answer: B
Topic: Elasticities
Skill: Analytical thinking
Status: Old

51) If price of product A increases by 10%, and the quantity demanded for product B drops by 50%, then the cross price elasticity of the quantity of product A with respect to price of product B is
A) 5.
B) -5.
C) 0.2.
D) -0.2.
Answer: B
Topic: Elasticities
Skill: Analytical thinking
Status: Old

For the following, please answer "True" or "False" and explain why.

52) In the case of a linear demand curve, demand becomes more price elastic as price increases.
Answer: True. For a demand curve of the form Q = a - bp, elasticity can be written as -b[p/(a - bp)]. As p increases, the term in square brackets increases, making the elasticity increase.
Topic: Elasticities
Skill: Analytical thinking
Status: Old

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53) When comparing elasticities between two different linear demand curves, the curve that is flatter has greater price elasticity at every given price.
Answer: False. This statement confuses slope with elasticity. Elasticity is calculated by multiplying the slope times (p/Q). As a result, the vertical intercept (along the price axis) is the key to elasticity. The curve with the lower intercept will be more price elastic at every given price.
Topic: Elasticities
Skill: Analytical thinking
Status: Old

54) Because demand curves slope downward according to the Law of Demand, the price elasticity of demand is a negative number.
Answer: True. The price elasticity of demand measures the change in quantity demanded when a price change occurs. If price increases, the change in the quantity demanded will be negative.
Topic: Elasticities
Skill: Analytical thinking
Status: Old

55) If a linear supply curve has a zero intercept, the elasticity of supply is always unitary.
Answer: True. A linear supply curve from the origin takes the form $Q = ap$. Elasticity equals $a * p/Q$. Substituting for Q yields $a * p/ap$. Numerator and denominator cancel and the elasticity equals one at every price.
Topic: Elasticities
Skill: Analytical thinking
Status: Old

56) For all goods, the long run demand curve is always more elastic than the short run demand curve.
Answer: False. Goods that can be easily stored may have a more elastic short run demand curve than long run.
Topic: Elasticities
Skill: Analytical thinking
Status: Old

57) The short-run price elasticity of demand for refrigerators is relatively inelastic.
Answer: False. People can put off buying a refrigerator in the short run. Therefore, demand is elastic in the short run.
Topic: Elasticities
Skill: Analytical thinking
Status: Old

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58) Assume the market demand for wheat may be written as

$$Q = 45 - 2p + 0.3Y + 1pb$$

where Y refers to income and pb refers to the price of barley. Assuming that wheat and barley both sell for $1, and income is $20, calculate the price elasticity, cross price elasticity and income elasticity for wheat.
Answer:
First, solve for Q = 45 - 2(1) + .3(20) + 1(1) = 50.
Then price elasticity = -2(1/50) = -0.04.
Cross price elasticity = 1(1/50) = 0.02.
Income elasticity equals .3(20/50) = .12.
Topic: Elasticities
Skill: Analytical thinking
Status: Old

59) Compute the elasticity of demand for the demand curve $p = 15Q^{-0.7}$. Does the elasticity vary with the price?
Answer: For *constant elasticity demand* as this, the elasticity is the same throughout the demand curve. E = -0.7
Topic: Elasticities
Skill: Analytical thinking
Status: Old

60) Suppose the log-linear demand for widgets is found to be

$$Ln(Q) = 1.5 - 2ln(p)$$

According to this equation, a 10% increase in price will decrease Q by what percentage? What is the price elasticity of demand?
Answer: 20%, E = -2.
Topic: Elasticities
Skill: Analytical thinking
Status: Old

61) Which good would you expect to have a greater price elasticity: a gallon of gasoline sold at a specific gasoline station on Main Street in Phoenix, a gallon of gasoline sold in Phoenix, or a gallon of gasoline sold in Arizona? Why?
Answer: A gallon of gasoline sold at a specific station on Main Street in Phoenix, because there are more substitutes for that good than the others.
Topic: Elasticities
Skill: Application of knowledge
Status: Old

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62) The price elasticity of demand for gasoline is estimated to be -0.2. Two million gallons are sold daily at a price of $1. Use this information to calculate a demand curve for gasoline assuming it is linear.
Answer: Elasticity = slope (p/Q), -0.2 = slope (1/2).
The slope equals -0.4.
Thus Q = a - 0.4p or 2 = a - 0.4(1).
Solving yields a = 2.4. The demand curve is Q = 2.4 - 0.4p (where Q is expressed in million gallons).
Topic: Elasticities
Skill: Analytical thinking
Status: Old

63) Suppose that the long-run world demand and supply elasticities of crude oil are -0.906 and 0.515, respectively. The current long-run equilibrium price is $30 per barrel and the equilibrium quantity is 16.88 billion barrels per year.
a. Derive the (linear) long-run demand and supply equations.
b. Suppose the long-run supply curve you derived above consists of competitive supply plus the quantity of OPEC supply. If the long-run competitive supply (not including OPEC's production) is:

$$Q_S = 7.78 + 0.29p,$$

what must be OPEC′s level of production in this long-run equilibrium to maintain the price of $30?
Answer:
a. First derive the slope of the demand curve:
-.906 = -b(30/16.88) → b = .510
Find intercept: 16.88 = a - .510(30) → a=32.18
So demand is Q = 32.18 - .510p

Repeat this for supply:
0.515 = d(30/16.88) → d = .290
16.88 = c + .290(30) → c = 8.18
So Supply is Q = 8.18 + .290p

b. The world supply = 8.18 + .290p + Q_{OPEC}
Setting equal to demand at a world price of 30 solves for Q_{OPEC}
.818 + .290(30) + Q_{OPEC} = 32.18 - .510(30)
Q_{OPEC} = 7.362
OPEC will need to supply 7.362 billion barrels per year.
Topic: Elasticities
Skill: Analytical thinking
Status: Old

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64) Suppose that the current price of oil is $60 per barrel and the quantity sold is 90 million barrels per day. The current estimates of the price elasticity of supply and demand are $\eta = 1$ and $\varepsilon = -.2$ respectively.

a. Compute linear equations for the supply and demand.

b. What will be the effects on the market price and quantity if the U.S. government suddenly decides to purchase an additional 2 million barrels of oil? Assume that the addition consumption of oil by the government results in a parallel shift of the supply curve to the left by 2 million barrels per day.

Answer:

a. Because $\eta = 1$ the supply goes through the origin. The slope is

$1 = d(60/90)$ $d = 3/2.$ $Qs = 1.5p$

Slope of demand:

$-0.2 = -b(60/90)$ $b = 0.3$ $Qd = a - 0.3p$

$90 = a - .3(60)$ $a = 108$

$Qd = 108 - 0.3p$

b. The new supply becomes $Qs = 1.5p - 2$

$1.5p - 2 = 108 - 0.3p$

$1.8p = 110$

$p = 61.11$

$Q = 89.67$

Topic: Elasticities

Skill: Analytical thinking

Status: Old

65) Suppose the current price and quantity of widgets is p = $50 and Q = 125. The demand for widgets is log-linear and the price elasticity of demand is E = -2. The supply of widgets is perfectly elastic.

a. Derive the equations for the demand and supply of widgets.

b. What would be the effect on the equilibrium price and quantity if demand were to increase by 500 widgets?

Answer:

a. Because demand is log linear, the demand equation is of the form $Q = Ap^e$, where A is a positive constant and e is the price elasticity of demand. We can solve for A:

$125 = A(50)^{-2}$ $A = 312{,}500$

Demand is then given by $Q = 312500p^{-2}$

Supply is horizontal and so the equation is p = 125.

b. An increase in demand will lead to $Q^* = 313{,}000$ and $p^* = 125$

Topic: Elasticities

Skill: Analytical thinking

Status: Old

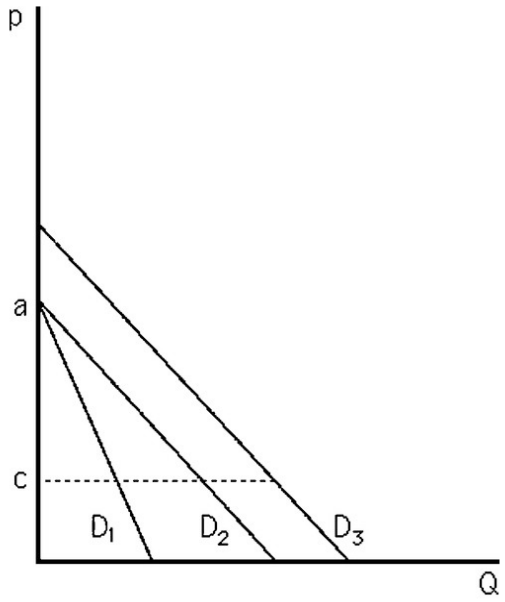
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66) The demand for labor is given by $L(w) = 1000 - .5w$, where w is the minimum wage. Find the level of w that maximizes the total wage payment, $wL(w)$. What is the wage-elasticity of labor demand at the maximizing minimum wage?
Answer:
We maximize $w(1000 - .5w)$, which occurs where the derivative is zero:

$$1000 - w = 0$$

Thus, $w = 1000$. The elasticity at that point is $E = (dL/dw)(w/L) = .5(1000/500) = 1$.
Topic: Elasticities
Skill: Analytical thinking
Status: Old



67) The above figure shows three demand curves labeled D_1, D_2, and D_3. Rank these three demand curves in terms of elasticity at a price of c.
Answer: First, compare D_1 to D_2.
Moving from price a to price c, $dQ/dp = Q/(c - a)$.
Elasticity equals $Q/(c - a) * (c/Q) = c/(c - a)$ for both D_1 and D_2.
To compare D_2 with D_3, consider that they have the same slope; call it b.
Then $E_1 = bc/Q_1$ and $E_3 = bc/Q_3$. Since $Q_3 > Q_1$, D_1 is more elastic.
Thus $E_1 = E_2 > E_3$ (in absolute terms).
Topic: Elasticities
Skill: Analytical thinking
Status: Old

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68) Explain why when the demand curve for a good is elastic, a one percent reduction in the price of the good will increase a consumer's expenditure on the good.
Answer: When a good has an elastic demand, a one percent decrease in the price will result in a greater than one percent increase in the quantity demanded. Thus the price multiplied by the quantity will increase when the price declines by one percent.
Topic: Elasticities
Skill: Analytical thinking
Status: Old

69) Explain why the price elasticity of demand changes along a linear demand curve.
Answer: The price elasticity of demand depends on BOTH the slope of the demand curve and on the term P/Q which changes as you move along the demand curve.
Topic: Elasticities
Skill: Analytical thinking
Status: Old

70) Explain whether you would expect the elasticity of supply to be highly elastic or inelastic for fresh cut flowers and why.
Answer: The elasticity of supply is very inelastic for fresh cut flowers. These flowers are perishable and quickly become worthless. The seller will accept almost any market price.
Topic: Elasticities
Skill: Application of knowledge
Status: Old

71) Suppose the demand for pork is given by the equation

$$Q = p^{-0.5}p_c^{0.2}$$

where p_c is the price of chicken. Compute the cross-price elasticity of demand for pork
Answer: The partial derivative of quantity w.r.t to the price of chicken is:

$$\partial Q/\partial p_c = 0.2p^{-0.5}p_c^{-0.8}$$

The cross-price elasticity is then

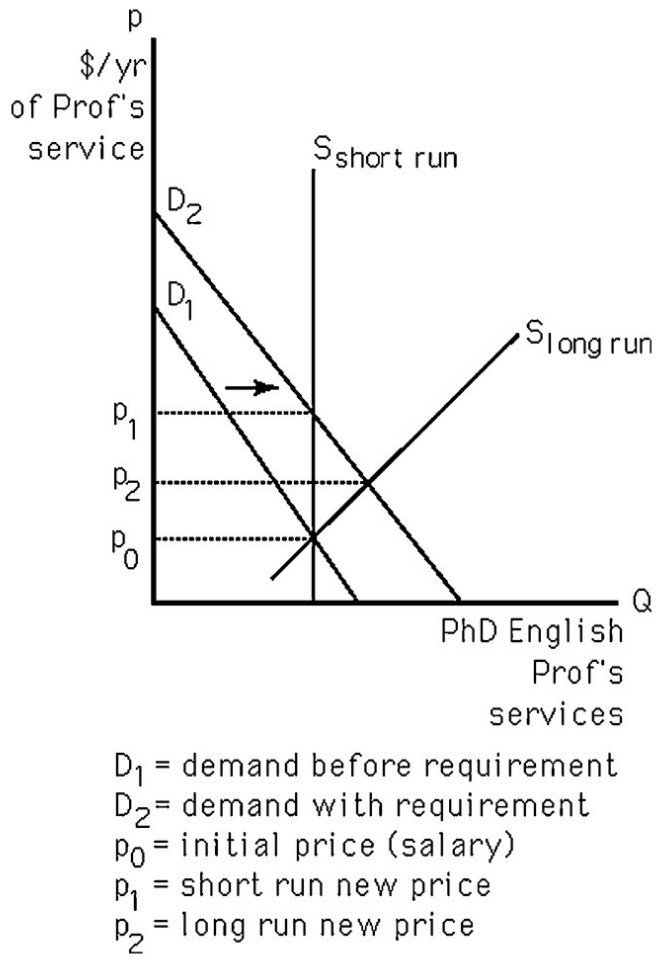
$$E = 0.2p^{-0.5}p_c^{-0.8} \cdot p_c/(p^{-0.5}p_c^{0.2}) = 0.2$$

Topic: Elasticities
Skill: Analytical thinking
Status: Old

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72) The National Association of Business Schools recently required that all business schools must hire three additional people with Ph.D. degrees in English literature. What is the immediate effect on the salaries of people with Ph.D.s in English literature? What will be the effect after ten years?
Answer:



See the above figure. Initially, the quantity of Ph.D.s is relatively fixed. The increased demand raises their salary. In the long run, the increased salary attracts more people to train for a Ph.D. in English literature. The long-run elasticity of supply is greater than the short-run elasticity of supply. After 10 years, the salary increase is not as great as the initial salary increase.
Topic: Elasticities
Skill: Application of knowledge
Status: Old

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73) Explain why short-run demand for frozen fish sticks may be more price elastic in the short run than in the long run.
Answer: Frozen fish sticks can be stored. If frozen fish sticks go on sale, you can buy large quantities and store them in your freezer. Thus you may be more sensitive to price changes in the short run.
Topic: Elasticities
Skill: Application of knowledge
Status: Old

74) Suppose that the current price of oil is $60 per barrel and the quantity sold is 90 million barrels per day. The current estimates of the price elasticity of supply and demand are $\eta = 1$ and $\varepsilon = -.2$ respectively. What will be the effects on the market price and quantity if the U.S. government suddenly decides to purchase an additional 2 million barrels of oil? Assume that the supply and demand curves are linear and the addition consumption of oil by the government results in a parallel shift of the supply curve to the left by 2 million barrels per day.
Answer: First use the elasticities and current price and quantity to estimate the linear demand and supply equations:

1 = (slope of supply) × (60 per barrel)/(90 million)

Thus the slope of the supply curve is 1.5. Using the current price and quantity, we can solve for the supply curve intercept:

$Q_S = A + 1.5p$

$90 = A + 1.5\ (60)$

$A = 0$

The supply curve is then given by $Q_S = 1.5p$. Repeat this process to find the demand equation:

-.2 = (slope of demand) × (60 per barrel)/(90 million)

The slope of the demand curve is -.3. The intercept is 108 so the demand equation is :

$Q_D = 108\text{-}0.3p$

The supply curve following the government's purchase of oil will become:

$Q_S = 1.5p - 2$

Setting supply and demand equal to find equilibrium price:

$1.5p - 2 = 108 - .3p$

$p = 61.11$

The quantity if found from plugging the price into either the (new) supply or demand equation. Q = 89.67 million barrels per day. Thus the purchase of oil by the government increases the price and reduces the quantity sold in the market. Including the government's purchase of 2 million barrels, the quantity increases to 91.67. Thus the government purchase crowded out .33 million barrels of private consumption of oil.
Topic: Elasticities
Skill: Analytical thinking
Status: Old

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2.6 Effects of a Sales Tax

1) Suppose the supply curve and the demand curve both have unitary elasticity at all prices. The price increase to consumers resulting from a specific tax of $1 imposed on sellers will be
A) $1.
B) 50 cents.
C) zero.
D) Impossible to calculate without knowing the slope of the supply curve.
Answer: B
Topic: Effects of a Sales Tax
Skill: Analytical thinking
Status: Old

2) For a given positively sloped supply curve, the price increase to consumers resulting from a specific tax imposed on sellers will be
A) greater the more price elastic demand is.
B) greater the less price elastic demand is.
C) equal to the entire tax when demand is perfectly elastic.
D) equal to half of the tax whenever demand is unit elastic.
Answer: B
Topic: Effects of a Sales Tax
Skill: Analytical thinking
Status: Old

3) A specific tax on sellers will
A) shift the demand curve to the right.
B) shift the demand curve to the left.
C) shift the supply curve to the right.
D) shift the supply curve to the left.
Answer: D
Topic: Effects of a Sales Tax
Skill: Analytical thinking
Status: Old

4) Consumers will always pay the entire amount of a specific tax whenever
A) demand is perfectly inelastic.
B) supply is perfectly elastic.
C) Both A and B above.
D) Either A or B above but not at the same time.
Answer: C
Topic: Effects of a Sales Tax
Skill: Analytical thinking
Status: Old

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5) If a government wants to maximize revenues from a tax, it should
A) impose it on sellers.
B) impose it on consumers.
C) choose a good with a relatively elastic demand.
D) choose a good with a relatively inelastic demand.
Answer: D
Topic: Effects of a Sales Tax
Skill: Analytical thinking
Status: Old

6) If the demand curve for a good is unit price elastic and the supply curve is perfectly price elastic, a $1 specific tax imposed on the sellers of this good will
A) shift the supply curve up vertically by $1.
B) shift the demand curve down vertically by $1.
C) not raise price at all.
D) cause price to increase but by less than $1.
Answer: A
Topic: Effects of a Sales Tax
Skill: Analytical thinking
Status: Old

7) Suppose the demand curve for a good is downward sloping and the supply curve is upward sloping. At the market equilibrium, if demand is more elastic than supply in absolute value, a $1 specific tax will
A) raise the price to consumers by 50 cents.
B) raise the price to consumers by less than 50 cents.
C) raise the price to consumers by more than 50 cents.
D) raise the price to consumers by $1.
Answer: B
Topic: Effects of a Sales Tax
Skill: Analytical thinking
Status: Old

8) Suppose the demand curve is perfectly inelastic and the supply curve is upward sloping. The price sellers receive after a specific tax is imposed on sellers
A) is less than before the tax.
B) is higher than before the tax.
C) is unchanged.
D) depends on the supply elasticity.
Answer: C
Topic: Effects of a Sales Tax
Skill: Analytical thinking
Status: Old

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9) The vertical distance of the shift in supply from a specific tax of t amount on producers will
A) equal t.
B) be less than t.
C) depend on the elasticity of supply.
D) depend on the incidence of the tax.
Answer: A
Topic: Effects of a Sales Tax
Skill: Analytical thinking
Status: Old

10) Suppose the demand curve for movie tickets has unitary price elasticity and the supply curve is perfectly price elastic. If 3 million tickets are currently sold at a price of $5, approximately how much tax revenue could the government generate from a $1 specific tax?
A) $18 million
B) $3 million
C) $2.5 million
D) $1.5 million
Answer: C
Topic: Effects of a Sales Tax
Skill: Analytical thinking
Status: Old

11) In the case of a specific tax, tax incidence is independent of who pays
A) only when supply and demand elasticities are not constant.
B) only when the tax is collected from consumers.
C) in most but not all cases.
D) in all cases.
Answer: D
Topic: Effects of a Sales Tax
Skill: Analytical thinking
Status: Old

12) If the government decides to levy an ad valorem tax on product with a perfectly inelastic supply. The consumers tax incidence will be
A) 0.
B) 1.
C) .5.
D) Cannot be determined.
Answer: A
Topic: Effects of a Sales Tax
Skill: Analytical thinking
Status: Old

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13) In the case of a specific tax the resulting price received by producers depends on
A) the tax rate.
B) the price elasticity of supply.
C) the price elasticity of demand.
D) All of the above.
Answer: D
Topic: Effects of a Sales Tax
Skill: Analytical thinking
Status: Revised

14) The tax incidence of a specific tax or *ad valorem* tax is influenced by
A) who pays the tax.
B) the amount of the tax.
C) the price elasticities of supply and demand.
D) All of the above.
Answer: C
Topic: Effects of a Sales Tax
Skill: Analytical thinking
Status: Old

15) The benefit of a subsidy paid on each unit sold will go entirely to the sellers in the market if
A) the supply curve is perfectly inelastic.
B) if the subsidy is paid to producers.
C) the demand curve is perfectly elastic.
D) the supply is perfectly elastic.
Answer: D
Topic: Effects of a Sales Tax
Skill: Analytical thinking
Status: Old

16) If the government levies a specific tax on tobacco producers, the spending of consumers will probably
A) increase.
B) decrease.
C) remain unchanged.
D) depend on supply elasticity.
Answer: A
Topic: Effects of a Sales Tax
Skill: Application of knowledge
Status: Old

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For the following, please answer "True" or "False" and explain why.

17) Only in the case of perfectly inelastic demand will consumers pay the full amount of a specific tax or *ad valorem* tax.
Answer: False. While it is true that consumers pay the full tax in the case of perfectly inelastic demand, it is not the only case. Regardless of demand elasticity (except in the rare case where demand is also perfectly elastic), consumers will pay the full amount of the tax if supply is perfectly elastic.
Topic: Effects of a Sales Tax
Skill: Analytical thinking
Status: Old

18) Government revenue from an excise tax of a given amount is greater when demand is relatively inelastic than when it is relatively elastic.
Answer: True. The tax will result in larger quantity sold the more inelastic demand is. Since the tax is on a per unit basis, the tax revenue is greater for the inelastic demand curve.
Topic: Effects of a Sales Tax
Skill: Analytical thinking
Status: Old

19) Explain why a tax increase on cigarettes in one state might not lead to a substantial price increase for all consumers in that state.
Answer: Smuggling of non-taxed cigarettes and on-line buying where taxes don't apply by some consumers may prevent a price increase for these consumers.
Topic: Effects of a Sales Tax
Skill: Analytical thinking
Status: Old

20) Suppose the market for grass seed can be expressed as:

Demand: $Q_D = 100 - 2p$

Supply: $Q_S = 3p$

At the market equilibrium, calculate the price elasticities of supply and demand. Use these numbers to predict the change in price resulting from a specific tax.
Answer: At $p = 20$ $Q = 60$, $e = -2 * (20/60) = -0.67$. $n = 3 * (20/60) = 1$.
The change in price resulting from a specific tax $= [n/(n - e)] * \text{tax} = [1/1.67] * \text{tax} = 0.6 * \text{tax}$.
Topic: Effects of a Sales Tax
Skill: Analytical thinking
Status: Old

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21) Suppose the market for grass seed can be expressed as:

Demand: $Q_D = 100 - 2p$

Supply: $Q_S = 3p$

If government imposes a $5 specific tax to be collected from sellers, what is the price consumers will pay? How much tax revenue is collected? What fraction is paid by sellers?
Answer: At equilibrium without the tax, p = 20 and Q = 60. In addition to receiving their price, sellers must also receive $5 per unit. Rearranging the supply curve yields p = Q/3; adding the tax yields p = (Q/3) + 5. Substituting this into the demand curve yields Q = 100 - 2[(Q/3) + 5] = 90 - (2/3)Q or (5/3)Q = 90. Solving yields Q = 54. Substituting into either demand curve or supply curve plus tax yields p = 23. Tax revenue = 5 ∗ 54 = 270. Since price rose $3 on a $5 tax, consumers pay 3/5 of the tax or 162, and sellers pay 2/5 of the tax.
Topic: Effects of a Sales Tax
Skill: Analytical thinking
Status: Old

22) Suppose the market for grass seed can be expressed as:

Demand: $Q_D = 100 - 2p$

Supply: $Q_S = 3p$

If government imposes a 10% ad valorem tax to be collected from sellers, what is the price consumers will pay? How much tax revenue is collected?
Answer: First rearrange the supply curve, p = Q/3. Sellers must receive this price plus 10% more to pay the tax. Thus p + tax = (1.1Q)/3. Substituting into the demand curve yields Q = 100 - (2.2/3)Q or (5.2/3)Q = 100 or Q = 57.69. Solving for price plus tax yields p + tax = (100 - 57.69)/2 = 21.15. Note price does not rise by 10% of the old price of 20; 21.15 represents the new price plus the 10% tax. Solving for the price yields p = 21.15/1.1 = 19.23. Tax revenue equals (21.15 - 19.23) ∗ 57.69.
Topic: Effects of a Sales Tax
Skill: Analytical thinking
Status: Old

23) Suppose the market for grass seed is expressed as:

Demand: $Q_D = 100 - 2p$

Supply: $Q_S = 3p$

Price elasticity of supply is constant at 1. If the supply curve is changed to Q = 8p, price elasticity of supply is still constant at one. Yet with the new supply curve, consumers pay a larger share of a specific tax. Why?
Answer: Even though the elasticity of supply has not changed, the new supply curve intersects the old demand curve at a lower price where demand is relatively less elastic than at the higher price. As a result, consumers' tax incidence is higher.
Topic: Effects of a Sales Tax
Skill: Analytical thinking
Status: Old

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24) Suppose the market for grass seed can be expressed as:

Demand: $Q_D = 100 - 2p$

Supply: $Q_S = 3p$

Price elasticity of supply is constant at one. If the demand curve is changed to Q = 10 - .2p, price elasticity of demand at any given price is the same as before. Yet the incidence of a tax falling on consumers will be higher. Why?

Answer: With the same vertical intercept, the steeper demand curve results in the equilibrium price being lower than with the old demand curve. At the lower price, demand is relatively less elastic than with the original curve, resulting in a greater tax incidence falling on consumers.

Topic: Effects of a Sales Tax

Skill: Analytical thinking

Status: Old

25) Suppose the market for grass seed can be expressed as:

Demand: $Q_D = 200 - 5p$

Supply: $Q_S = 40 + 5p$

If the government collects a $5 specific tax from sellers, how much will the quantity demanded change from the amount demanded before the tax? What price will consumers pay after the tax? What price will sellers receive after the tax? What is the tax revenue?

Answer: The before-tax quantity is found by setting Q_D equal to Q_S and solving for the quantity demanded. The quantity demanded is 120. To obtain the quantity demanded after the tax, solve for the inverse supply curve and then add the $5 tax. The new inverse supply curve is $P = Q_S/5 - 3$. The new inverse supply curve can then be substituted into the demand curve to solve for the quantity demanded after the tax, which is 107.5. The price consumers pay is found by substituting 107.5 into the demand curve, which yields $18.5. The price suppliers receive is found by substituting 107.5 into the original supply curve, which yields $13.5. The tax revenue is equal to the quantity demanded multiplied by the tax which is $537.5.

Topic: Effects of a Sales Tax

Skill: Analytical thinking

Status: Old

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26) Suppose that a market has the following supply and demand equations:

Demand: $Q_D = 380 - 10p$

Supply: $Q_S = 80 + 5p$

If the government imposes a specific tax of τ on suppliers, what will be the price buyers pay and sellers receive, quantity, and government revenue from the tax (as functions of τ). What tax level maximizes the revenue the government collects from the tax?

Answer: First, compute the after-tax equilibrium price by equating the demand to the supply with tax:

$400 - 10p = 80 + 5(p - \tau)$

$p = 20 + \tau/3$

Therefore the buyers pay a price = $20 + \tau/3$ and sellers receive a price = $20 - 2\tau/3$. The equilibrium quantity is found by plugging the buyers' price into the demand equation:

$Q = 180 - 3.33\tau$.

The government revenue from the tax is:

$GR = (180 - 3.33\tau) \times \tau$

To maximize the revenue generated, we take the derivative of the GR function with respect to the tax and set equal to zero:

$dGR/d\tau = 180 - 6.67\tau = 0$

Thus the revenue-maximizing tax rate is $\tau = \$27$

Topic: Effects of a Sales Tax

Skill: Analytical thinking

Status: Old

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27) The California cigarette market consists of the following supply and demand curves:

$Q_D = 150 - 20p$

$Q_S = 40p$

where Q is the number of packs of cigarettes per year (in millions!), and p is the price per pack.

a. Compute the market equilibrium price and quantity.

b. Calculate the price elasticities of each curve at the equilibrium price/quantity.

c. California imposes a tax on cigarettes of $0.90 per pack. Suppliers pay this tax to the government. Compute the after-tax price and quantity. How much do suppliers receive net of tax (per pack)?

d. Demand for cigarettes is generally more elastic over longer periods of time as consumers have more time to kick the habit. What does this imply about the tax incidence in the long run as compared to the short run?

Answer:

a. Set the supply and demand equal:

$150 - 20p = 40p$

Solving for p:

$p^* = 2.5$

$Q^* = 100$

So the price is $2.50 per pack and 100 million packs of cigarettes sold.

b. The slope of the demand equation is:

$dQ_D/dp = -20$

The elasticity of demand is therefore

$E_D = -20\ (2.5/100) = -0.5$

The slope of the supply equation is:

$dQ_S/dp = 40$

The elasticity of supply is then:

$E_S = 40\ (2.5/100) = 1.0$

c. The supply with the tax becomes:

$Q_S = 40(p - 0.90)$

The new equilibrium is where

$40(p - 0.90) = 150 - 20p$

$60p = 180$

$p^* = 3.10$

The quantity is:

$Q^* = 150 - 20\ (3.10) = 88$

The price sellers earn net of tax (per pack) is 3.10 - 0.90 = $2.20.

d. The more elastic the demand curve is, the less of the burden falls on consumers. So over a longer period of time, the burden on consumers ($0.60) will move towards the suppliers. Price will fall from $3.10 as consumers quit smoking.

Topic: Effects of a Sales Tax

Skill: Analytical thinking

Status: Old

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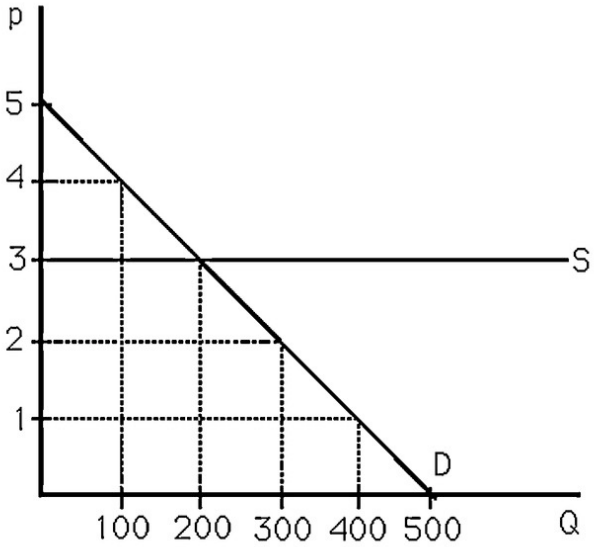
2.7 Quantity Supplied Need Not Equal Quantity Demanded

1) Municipalities that have adopted the policy of "rent control" typically set the rentals on certain apartments well below equilibrium. As a result,
A) landlords have a difficult time finding tenants.
B) prospective tenants have a difficult time finding available apartments.
C) there is a surplus of apartments.
D) All of the above.
Answer: B
Topic: Quantity Supplied Need Not Equal Quantity Demanded
Skill: Application of knowledge
Status: Old

2) When "rent controls" result in a shortage of housing, landlords
A) use criteria other than price to allocate housing.
B) lower the price to allocate the housing.
C) attempt to attract renters.
D) None of the above.
Answer: A
Topic: Quantity Supplied Need Not Equal Quantity Demanded
Skill: Application of knowledge
Status: Old

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3) The above figure shows the market for crude oil. If a consumer group convinces the government to set a maximum price of $2 per barrel, then
A) 300 barrels of crude oil will be sold at $2.
B) zero barrels of crude oil will be sold.
C) zero barrels of crude oil will be demanded.
D) None of the above.
Answer: B
Topic: Quantity Supplied Need Not Equal Quantity Demanded
Skill: Analytical thinking
Status: Old

4) The above figure shows the market for crude oil. If the oil exploration firms convince the government to set a minimum price of $4 per barrel, then
A) 100 barrels of crude oil will be sold at $4.
B) zero barrels of crude oil will be sold.
C) zero barrels of crude oil will be demanded.
D) None of the above.
Answer: A
Topic: Quantity Supplied Need Not Equal Quantity Demanded
Skill: Analytical thinking
Status: Old

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5) If a government-imposed price ceiling causes the observed price in a market to be below the equilibrium price,
A) there will be excess demand.
B) there will be excess supply.
C) the curves will shift to make a new equilibrium at the regulated price.
D) None of the above.
Answer: A
Topic: Quantity Supplied Need Not Equal Quantity Demanded
Skill: Analytical thinking
Status: Old

6) In the labor market, if the government imposes a minimum wage that is below the equilibrium wage, then
A) workers who wish to work at the minimum wage will have a difficult time finding jobs.
B) firms will hire fewer workers than without the minimum wage law.
C) some workers may lose their jobs as a result.
D) nothing will happen to the wage rate or employment.
Answer: D
Topic: Quantity Supplied Need Not Equal Quantity Demanded
Skill: Application of knowledge
Status: Old

7) Suppose the market for potatoes can be expressed as follows:

Supply: $Q^S = -20 + 10p$

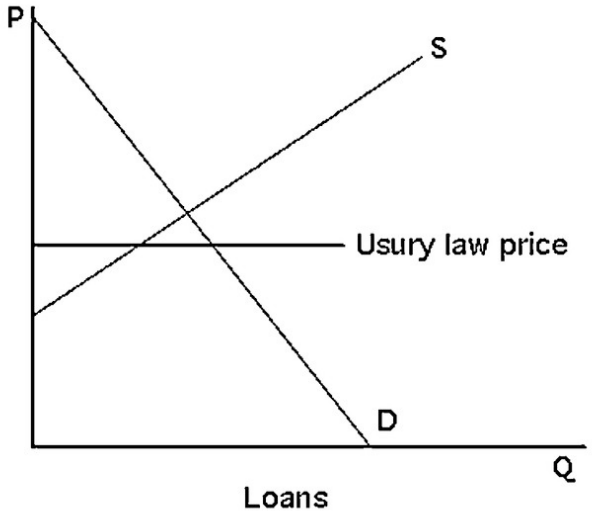
Demand: $Q^D = 400 - 20p$

If the government sets a maximum price of $10 per unit, what will be the quantity demanded and quantity supplied?
Answer: With a maximum price of $10, suppliers will sell only 80 units. ($Q = -20 + 10(10) = 80$). But at a price of $10, buyers wish to purchase 200 units: $Q = 400 - 20(10) = 200$. Thus there will be excess demand of 120 units.
Topic: Quantity Supplied Need Not Equal Quantity Demanded
Skill: Analytical thinking
Status: Old

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8) Usury laws place a ceiling on interest rates that lenders such as banks can charge borrowers. The interest rate is the price of a loan. Graph a binding usury law on the market for loans, and describe the effects of the law on the quantity of loans supplied and the quantity of loans demanded.
Answer:



See the above figure. The usury law will result in more loans being demanded and fewer loans being supplied.
Topic: Quantity Supplied Need Not Equal Quantity Demanded
Skill: Analytical thinking
Status: Old

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9) Suppose the market for corn is given by the following equations for supply and demand:

$Q_S = 2p - 2$

$Q_D = 13 - p$

where Q is the quantity in millions of bushels per year and p is the price.

a. Calculate the equilibrium price and quantity. Sketch the supply and demand curves on a graph indicating the equilibrium.

b. If a price floor is imposed at $7 per bushel, will there be a surplus or a shortage? What is the quantity of excess supply or demand that results? Draw a graph to show this.

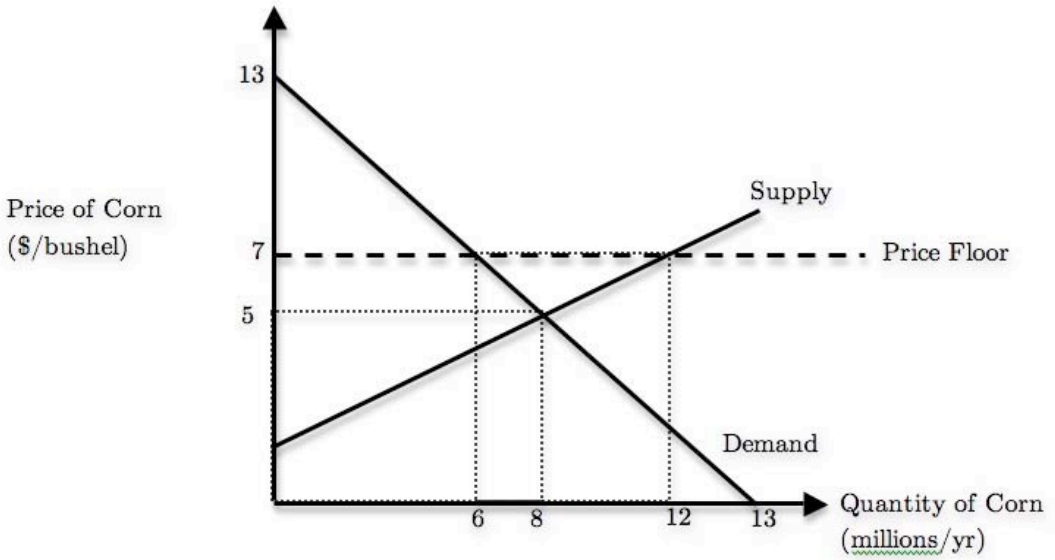
Answer:

a. $2p - 2 = 13 - p \quad p^* = 5 \quad Q^* = 8$

b. $Q_S = 2(7) - 2 = 12$

$Q_D = 13 - (7) = 6 \qquad Q_S > Q_D$, so there is a **surplus.**

excess supply = 12 - 6 = 6 million bushels/yr



Topic: Quantity Supplied Need Not Equal Quantity Demanded
Skill: Analytical thinking
Status: Old

2.8 When to Use the Supply-and-Demand Model

1) It is appropriate to use the supply-and-demand model if, in a market,
A) everyone is a price taker with full information about the price and quality of the good.
B) firms sell identical products.
C) costs of trading are low.
D) All of the above.
Answer: D
Topic: When to Use the Supply-and-Demand Model
Skill: Analytical thinking
Status: Old

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2) Consumers and firms are known as price takers only if
A) no market exists to determine the equilibrium price.
B) they can set the market price.
C) they cannot affect the market price.
D) excess demand exists.
Answer: C
Topic: When to Use the Supply-and-Demand Model
Skill: Analytical thinking
Status: Old

3) Costs that pertain to finding a trading partner and making a trade are called
A) transaction costs.
B) transgression costs.
C) consumption costs.
D) transaction taxes.
Answer: A
Topic: When to Use the Supply-and-Demand Model
Skill: Analytical thinking
Status: Old

4) It is appropriate to use the supply-and-demand model in which of the following markets?
A) beer market
B) car market
C) wheat market
D) market for breakfast cereal
Answer: C
Topic: When to Use the Supply-and-Demand Model
Skill: Application of knowledge
Status: Old

For the following, please answer "True" or "False" and explain why.

5) The supply-and-demand model may not be appropriate in markets with large transaction costs.
Answer: True. If the costs of finding a trading partner are high, no trades may occur, or trades may occur at a variety of prices.
Topic: When to Use the Supply-and-Demand Model
Skill: Analytical thinking
Status: Old

6) Explain why the supply-and-demand model should not be used to analyze the market for jeans.
Answer: Products in the jeans market are not identical (at least not in the consumers eyes). The fact that there is only one manufacturer per brand gives that particular firm (limited) power over the price of its product. Thus two conditions for the use of the model are not fulfilled.
Topic: When to Use the Supply-and-Demand Model
Skill: Application of knowledge
Status: Old

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