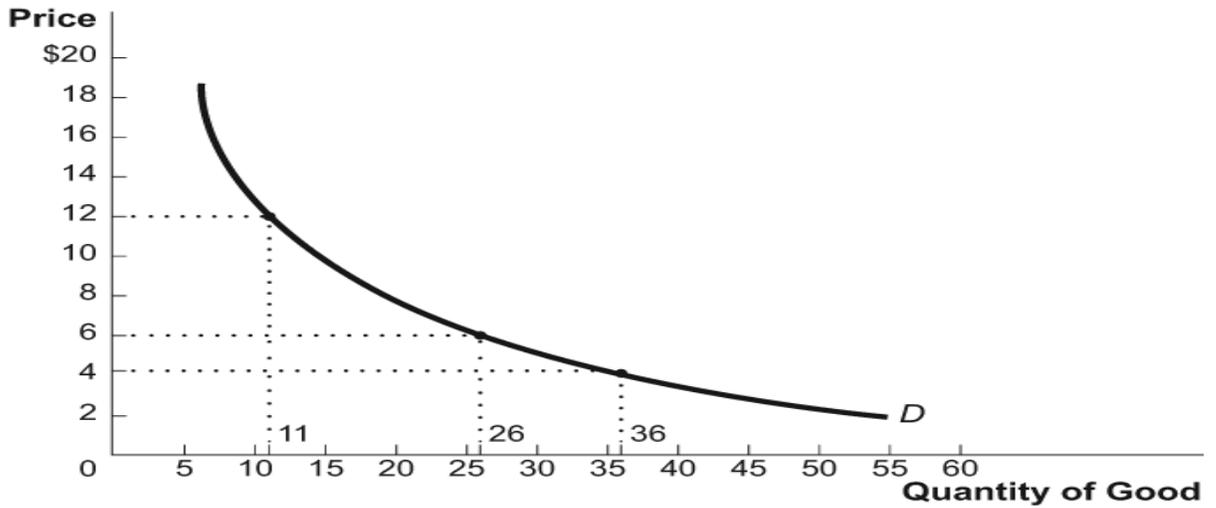


Demand and Supply

1.

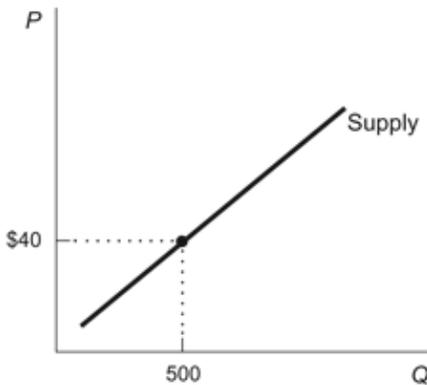


Given the figure above, which of the following statements is true?

- a. At a price of \$12 per unit, consumers are willing and able to purchase between 11 and 26 units of Good X.
- b. 36 units of Good X can be purchased by spending a total of \$4.
- c. At a price of \$6 per unit, consumers are willing and able to purchase 26 units of Good X.
- d. The value of the first 36 units is \$4 for each consumer.

From the figure, the maximum price that consumers are willing to pay for 36 units of Good X is _____ per unit. \$4

2.



A vertical reading of the figure indicates that:

- a. at a price higher than \$40, the quantity supplied drops to zero.
- b. to produce 500 units suppliers must be paid at least \$40 per unit.
- c. at a price of \$40 per unit, suppliers are willing and able to sell 500 units.
- d. at a price lower than \$40, the quantity supplied drops to zero.

3. Use the table below represents the value that 4 students place on a used economics book. Use this table to answer the questions that follow. Assume that each student is only interested in buying one book.

BUYER	Buyer's Value
MIKE	\$50
SANDY	\$30
JONATHAN	\$20
HALEY	\$10

- If the price of a used book is \$15, then who would be willing to purchase the product?
Mike, Sandy, and Jonathan
- What is the **total value received** by the consumers who buy a book at a price of \$15?
\$100
- What is the **total value of consumer surplus** when the price of a used book is \$15? **\$55**
- Suppose that it is announced that the questions for the midterm will be drawn out of the textbook and that this announcement increases the amount that each person is willing and able to pay by \$10. How many textbooks will be demanded if the price is \$15?**4**
- If the price of a used econ book is \$18 and everybody who is willing to pay that price gets one, what is the value of consumer surplus in this market? **\$46**
- Use the information provided to complete the demand schedule for a used economics book. Assume that the buyer will purchase a book whenever they are indifferent. Sketch the new demand curve.

Price	Qty. Demanded
\$60	0
\$50	1
\$40	1
\$30	2
\$20	3
\$10	4
\$0	4

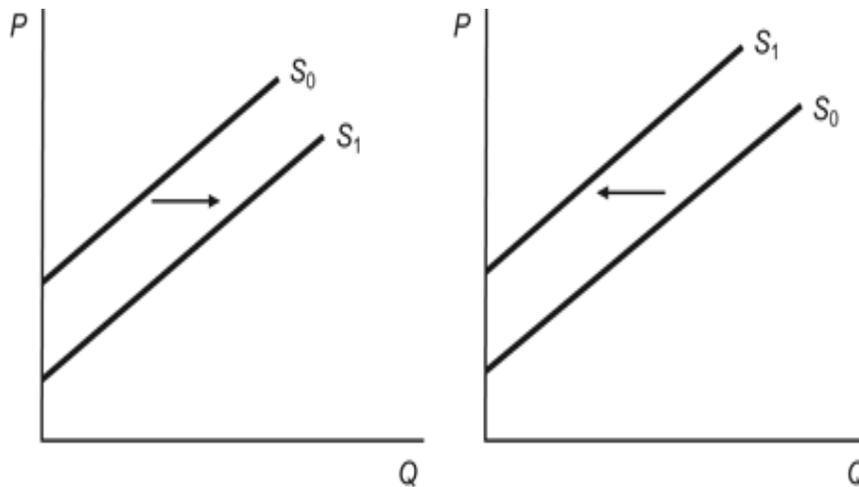
4. Below are 5 students, each of whom owns an iPad. Next to each student is the value that the student puts on their iPad. Assume that if offered the right price each of these students would be willing to sell their iPad.

	Value
David	\$800
Ivan	\$400
Wanda	\$800
Phillip	\$700
Sherry	\$550

- If the market price of a used iPad is \$300, then how many of these students will be willing and able to sell their iPad? **None of them is willing to sell at this price.** Calculate the value of producer surplus. **\$0**
- If the market price of a used iPad is \$500, then how many of these students will be willing and able to sell their iPad? **Only 1 (Ivan)** Calculate the value of producer surplus. **\$100**
- If the market price of a used iPad is \$675, then how many of these students will be willing and able to sell their iPad? **2 (Ivan and Sherry).** Calculate the value of producer surplus. **\$400**
- Why are more people willing and able to sell their iPad at the higher price? **If a student doesn't sell, then they get to keep their iPad and they get whatever value that iPad brings to them. In the case of Sherry, for example, she gets \$550. She has no incentive to sell when the price is \$300 or \$500 because it does not cover her OC (her OC is the value of keeping the iPad; \$550). However, when the market rises to \$700 it becomes more attractive to sell her iPad. Selling has a lower OC, then keeping it.**
- Use the information provided to draw the supply of iPads in this market. **Below is a copy of the supply schedule from which this supply curve would be drawn:**

Price	Qty. Supplied
\$300	0
\$400	1
\$500	1
\$600	2
\$700	3
\$800	5

5.



How many of the following statements are TRUE? 3

- a. Figure A depicts the expectation that the future price will decrease.
 - b. Figure A depicts the entry of foreign producers because of a reduction in trade barriers.
 - c. Figure B depicts falling input prices.
 - d. Figure B depicts technological innovations.
 - e. Figure B depicts an increase in taxes.
6. Each of the events listed below has an impact on the market for bicycles. For each event, which curve is affected (supply or demand for bicycles), what direction does it shift?
- a. The price of automobiles increases. Demand increases
 - b. Consumers' incomes decrease, and bicycles are a normal good. Demand decreases
 - c. The price of steel used to make bicycle frames increases. Supply decreases
 - d. An environmental movements shifts tastes toward bicycling. Demand increases
 - e. Consumers expect the price of bicycles to fall in the future. Demand decreases
 - f. A technological advance in the manufacture of bicycles occurs. Supply increases
 - g. The prices of bicycle helmets and shoes are reduced. Demand increases
 - h. Consumers' incomes decrease, and bicycles are an inferior good. Demand increases
7. A recent explosion in the demand for (and price of) organically produced foods has caused many farmers to convert from traditional farming methods to higher-cost organic farming methods. Explain what has happened to the opportunity cost of traditional farming and why. Based on your explanation, does it make sense to see so many farmers moving to organic farming? Explain. The opportunity cost of traditional farming has increased because of the increase in the prices of organic products. Farmers who continue to produce their crops using traditional farming methods give up the opportunity to farm organically, which commands a higher price. As a result, we should see less production of crops using traditional farming methods, and an increase in the supply of organic crops.

8. For each of three potential buyers of oranges, the table displays the willingness to pay for the first three oranges of the day. Assume Alex, Barb, and Carlos are the only three buyers of oranges.

	First Orange	Second Orange	Third Orange
Alex	\$2.00	\$1.50	\$0.75
Barb	\$1.50	\$1.00	\$0.80
Carlos	\$0.75	\$0.25	\$0

- If the market price of an orange is \$1.20, the market quantity of oranges demanded per day is 3.
- If the market price of an orange is \$0.70, the market quantity of oranges demanded per day is 7.
- If the market price of an orange is \$1.20, then what is the value of consumer surplus? \$1.40
- If the market price of an orange increases from \$0.60 to \$1.05, total consumer surplus increases/decreases by \$2.25.
- How much value does Alex get from consuming two oranges? \$3.50

9. Ford Motor Company announces that *next month* it will offer \$3,000 rebates on new Mustangs. As a result of this information, today's demand curve for Mustangs
- Shifts to the left.
 - Shifts either to the right or to the left, but we cannot determine the direction of the shift from the given information.
 - Shifts to the right.
 - Will not shift; rather the demand curve for Mustangs will shift to the right next month.
10. Linesha, a college student working part-time receives a wage increase. An avid movie buff, she increased her purchases of DVDs and reduced her purchases of video cassettes. Based on this information,
- DVDs and video cassettes are substitutes.
 - DVDs are normal goods and video cassettes are inferior goods.
 - DVDs and video cassettes are normal goods.
 - the cross-price elasticity between DVDs and video cassettes is negative.
11. Suppose that when the price of hamburgers decreases, the Ruiz family increases their purchases of ketchup. To the Ruiz family, hamburgers and ketchup are _____
- normal goods and the income elasticity of demand for both goods is positive.
 - complements and the cross-price elasticity of demand between these two goods is positive.
 - substitutes and the cross-price elasticity of demand between these two goods is negative.
 - complements and the cross-price elasticity of demand between these two goods is negative.
12. In this example we will consider the market for used textbooks. There are 11 buyers and 11 sellers in this market. Each buyer would like to buy up to 1 used textbook and the value they place on a used textbook is given in column 1. Each seller has one textbook to sell and the second column lists the minimum price they are willing to accept for their used textbook.

Value to Buyers	Value to Sellers
\$53	\$17
\$40	\$32
\$58	\$13
\$38	\$40
\$51	\$45
\$60	\$10
\$35	\$28
\$55	\$21
\$45	\$43
\$48	\$25
\$43	\$36

- a. If the market price is \$55, is there a shortage or a surplus? Do you expect the market price to rise or fall? **There is a surplus b/c the $Q_d = 3$ and the $Q_s = 11$, i.e. when $P = \$55$, $Q_d < Q_s$. The price should fall.**
- b. If the market price is \$35, is there a shortage or a surplus? Do you expect the market price to rise or fall? **There is a shortage b/c the $Q_d = 11$ and the $Q_s = 7$, i.e. when $P = \$35$, $Q_d > Q_s$. The price should rise.**
- c. Solve for the equilibrium quantity and price. What is the value of total surplus in this market? **$P = \$40$, $Q_s = Q_d = 9$, and $TS = \$231$.**

Suggest to the students that they put the buyer values in descending order and the seller costs in ascending order and emphasize that this is the information that we use to draw the demand and supply curves. The equilibrium occurs at the quantity where $BV = SC$ as shown below.

Value to Buyers	Value to Sellers
\$60	\$10
\$58	\$13
\$55	\$17
\$53	\$21
\$51	\$25
\$48	\$28
\$45	\$32
\$43	\$36
\$40	\$40
\$38	\$43
\$35	\$45

13. Suppose that when the price of apples rises by 20%, the quantity demanded of oranges rises by 6%. What is the cross-price elasticity of demand between apples and oranges? Are these two goods substitutes or complements? **$6/20 = 0.3$, apples and oranges are substitutes**
14. For each pair of goods listed below, which good would you expect to have the more elastic demand? Why?
 - a. Cigarettes; a trip to Florida over spring break
a trip to Florida because it is a luxury whereas cigarettes are a necessity to smokers
 - b. An AIDS vaccine over the next month; an AIDS vaccine over the next five years
An AIDS vaccine over the next five years because there are likely to be more substitutes (alternative medications) developed over this time period and consumers' behavior may be modified over long time periods.
 - c. Beer; Budweiser
Budweiser because it is a more narrowly defined market than beer so there are more substitutes for Budweiser than for beer.
 - d. Insulin; aspirin
Aspirin because there are many substitutes for aspirin but few substitutes for insulin.

15. For each pair of goods listed below, which good would you expect to have the more elastic supply? Why?
- Televisions; beachfront property
Televisions because the production of televisions can be increased in response to an increase in the price of televisions whereas the quantity of beachfront property is fixed.
 - Crude oil over the next week; crude oil over the next year
Crude oil over the next year because production of oil over the next year can more easily be increased than the production of oil over the next week.
 - A painting by van Gogh; a print of the same painting by van Gogh
A van Gogh print because more of them can be created in response to an increase in price whereas the quantity of an original work is fixed.

16. True or False:

- If the quantity demanded of a good is sensitive to a change in the price of that good, demand is said to be price inelastic. **False**
- The demand for tires should be more inelastic than the demand for Goodyear brand tires. **True**
- The demand for aspirin this month should be more elastic than the demand for aspirin this year. **False**
- If the cross-price elasticity of demand between two goods is 1.4, the goods are likely to be complements. **False**
- If the demand for a good is -0.7, an increase in its price will increase total revenue in that market. **True**
- If the income elasticity of demand for a bus ride is -2.4, then a bus ride is an inferior good. **True**
- If the price elasticity of supply for blue jeans is 1.3, an increase of 10 percent in the price of blue jeans would increase the quantity supplied of blue jeans by 13 percent. **True**

17. The table below provides the demand schedule for motel rooms at Small Town Motel. The second and third columns show the demand schedule when consumer incomes have risen from \$50,000 to \$60,000. Use this information to answer the following questions. Remember to use the midpoint formula when necessary.

Price	Qty. Demanded when income is \$50,000	Qty. Demanded when income is \$60,000
\$20	24	34
40	20	30
60	16	26
80	12	22
100	8	18
120	4	14

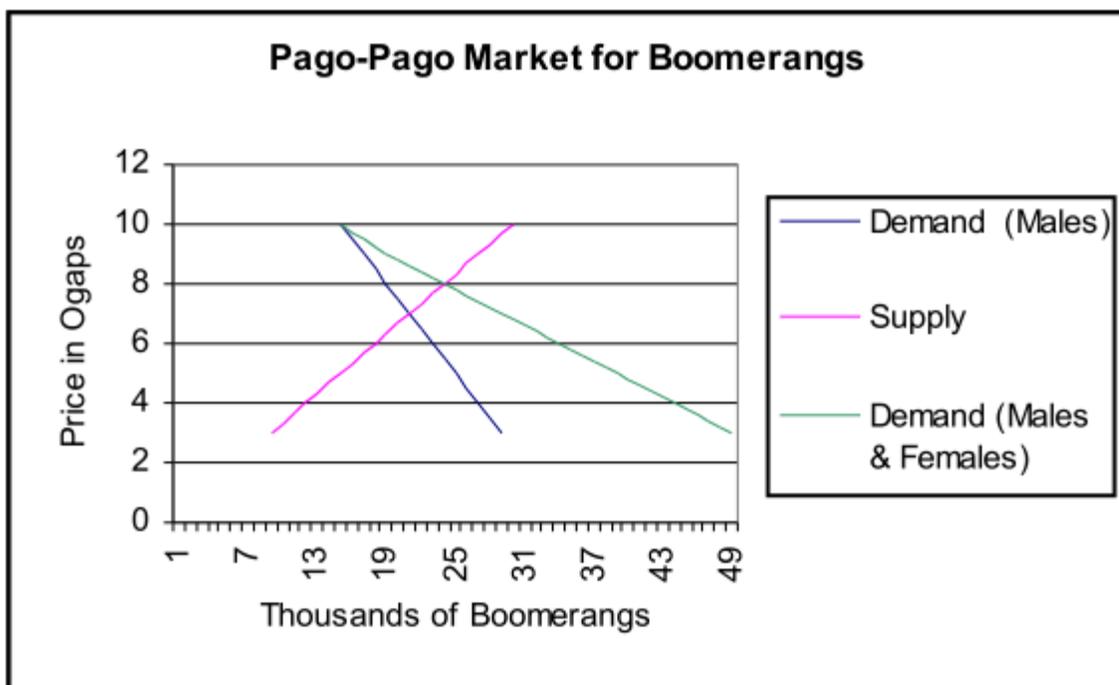
- What is the income elasticity of demand when motel rooms rent for \$40? **2.25**
- What is the income elasticity of demand when motel rooms rent for \$100? **6.25**
- Are motel rooms normal or inferior goods? Why? **Normal goods because the income elasticity of demand is positive.**
- Are motel rooms likely to be necessities or luxuries? Why? **Luxuries because the income elasticity of demand is greater than one.**

18. The island of Pago-Pago imports boomerangs from Australia, a past time toy played on the island by boys and girls. Consider the following market information about boomerangs:

At a price of (in ogaps):	10	9	8	7	6	5	4	3
QD-M (in thousands)	14	16	18	20	22	24	26	28
QS (in thousands)	29	26	23	20	17	14	11	8
QD-F (in thousands)	0	2	5	8	11	14	17	20

where QD-M is the quantity of boomerangs demanded by males, QS is the quantity of boomerangs supplied by Australian companies and the "ogap" is the local currency.

1) On a single graph plot the demand curve of only Pago-Pago males, the aggregate demand curve and the supply curve for boomerangs. What is the aggregate equilibrium price and quantity?



2) Consider each of the following circumstances and predict their separate impacts on one or both of these two curves. If a curve shifts, indicate the direction of the shift

a) the income of Pago-Pagoans declines after a typhoon hits the island.

The demand curve shifts to the left because people have less disposable income for goods, and thus buy fewer boomerangs

b) the Australians win the Olympic boomerang champions.

This could have the effect of increasing the demand for boomerangs in Australia, thereby raising the price of boomerangs in Australia and causing the manufacturer to divert supplies from Pago-Pago. In that case, the supply curve in Pago-Pago will shift left, causing a rise in price, a decline in quantity sold and a decline in quantity demanded. Or, If we assume that after the championship boomerangs become more popular in Pago-

Pago and boys want to imitate the Australian boomerang stars, then the demand curve in Pago-Pago shifts to the right.

- c) the price of Frisbees increases

We assume that Frisbees and boomerangs are substitutes. An increase in the price of Frisbees will make boomerangs more attractive, and the demand curve for boomerangs will shift to the right.

- d) the Pago-Pago government reduces tariffs on imported clothing

If we assume that boomerang T-shirts and boomerangs are complements then a decrease in the price of T-shirts will result in an increased quantity demanded of T-shirts and an increased demand for boomerangs. The demand curve for boomerangs will shift to the right. Another possible answer would be that clothing and boomerangs are essentially unrelated goods. If so, then the tariff on imported clothing would have no effect on the boomerang market.

- e) the Australian boomerang manufacturers decide to add a money-back guarantee on their product (if you don't like your boomerang, you may send, back).

This is a marketing technique to boost demand. Some people who want to check out boomerangs for free will actually keep them. The demand curve shifts to the right because preferences for boomerangs change. Further, if we assume that the money-back guarantee increases the firm's input cost (advertising and processing returns) then the supply curve shifts to the left

- f) a new type of vinyl discovered which has the same aerodynamic properties as the mahogany traditionally used in boomerangs but costs twice as much as mahogany.

The will be no change. No producer would switch to using an input that is two times as expensive as the old one but not any better

- g) a new type of plastic is invented which has the same aerodynamic properties as mahogany traditionally used in boomerangs but costs half as much as mahogany.

The supply curve will shift to the right because production becomes cheaper allowing the manufacturers to sell each quantity at a lower price than before.

- h) the wage rates paid to boomerang workers rise.

The supply curve will shift to the left because production becomes more expensive