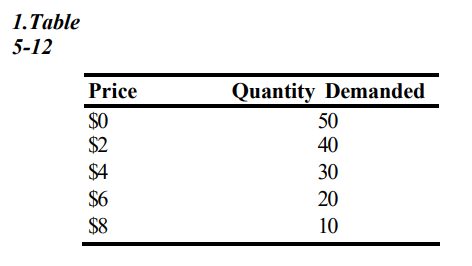
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a) **Refer to Table 5-12.** Using the midpoint method, what is the price elasticity of demand between $2 and $4?

PED = **0.43**

b) **Refer to Table 5-12.** Using the midpoint method, what is the price elasticity of demand between $6 and $8?

PED = **2.33**

c) **Refer to Table 5-12.** Between which two quantities listed is demand most inelastic?

between 50 and 40

d) **Refer to Table 5-12.** Between which two quantities listed is demand most elastic?

between 10 and 20

e) **Refer to Table 5-12.** Between which two quantities listed is demand unit elastic?

Between 20 and 30

2. Adam and Barb go to the store to purchase some lottery tickets. Without looking at the price, Adam says “I’ll take 10 lottery tickets,” and Barb says “I’ll take $10 worth of lottery tickets.” What is each person’s price elasticity of demand for lottery tickets?

Adam’s PED = 0

Barb’s PED = 1

No matter what price it is, Adam will buy 10 tickets (same quantity). Thus, his demand curve is inelastic.

3. Scenario 5-7

Suppose the demand function for good X is given by: where is the quantity demanded of good X, is the price of good X, and is the price of good Y, which is related to good X.

a) **Refer to Scenario 5-7.** Using the midpoint method, if the price of good Y is $10 and the price of good X decreases from $5 to $3, what is the price elasticity of demand for good X? Is the demand elastic, unitary elastic, or inelastic?

**Anwer:** 0.4 and inelastic

b) **Refer to Scenario 5-7.** Good X and Good Y are related as

**Answer**: complements

c) **Refer to Scenario 5-7.** Using the midpoint method, if the price of good X is $10 and the price of good Y increases from $8 to $10, the cross price elasticity of demand is about

**Answer**: -2.57

4. If the income elasticity of demand for a good is –1.40, is the good a normal or inferior good?

**Answer**: The good is a inferior good.

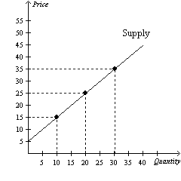
5. If the income elasticity of demand for a good is 0.56, is the good a normal or inferior good?

**Answer**: The good is a normal good.

Normal goods : income elasticity > 0

Inferior goods : income elasticity < 0

***6. Figure 5-21***

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a) **Refer to Figure 5-21.** Using the midpoint method, what is the price elasticity of supply between $15 and $25?

**Answer:** The price elasticity of supply is 1.33.

**Q= (10/15)\*100= 66.**67%

**P= (10/20)\*100= 50% => 66.**67/50= 1.33

b) **Refer to Figure 5-21.** Using the midpoint method, what is the price elasticity of supply between $25 and $35?

**Answer**: The price elasticity of supply is 1.20.

**Q= (10/25)\*100= 40%**

**P= (10/30)\*100= 33.33% => 40/33.33= 1.20**

c) **Refer to Figure 5-21.** Using the midpoint method, what is the price elasticity of supply between $5 and $15?

**Answer**: The price elasticity of supply is 2.

**Q= (10/5)\*100= 200%**

**P= (10/10)\*100= 100% => 200/100= 2**

7. If the quantity supplied is exactly the same regardless of the price, supply is

**Answer**: perfectly inelastic.

The supply is perfectly inelastic because the supply curve is drawn vertical to the X-axis if the supply is always constant regardless of the change in price.

8. If a supply curve is perfectly vertical, what is the value of the price elasticity of supply?

**Answer**: 0

Price elasticity of supply = % change in Q/ % change in P = 0%/ % change in P = 0

9. Suppose a freeze in Florida significantly reduces the supply of oranges this year. As a result, would you expect the total revenue from the sale of orange *juice* to rise or fall? Explain.

If the demand for orange juice is inelastic, then total revenue will rise.

If the demand for orange juice is elastic, then total revenue will fall.

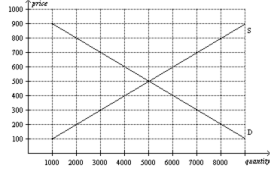
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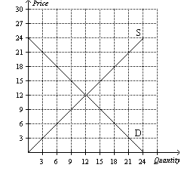
10.

a. Using the graph shown, analyze the effect a $300 price ceiling would have on the market for ten-speed bicycles. Would this be a binding price ceiling?

b. Using the graph shown, analyze the effect a $700 price floor would have on this market for ten-speed bicycles. Would this be a binding price floor?

c. Why would policymakers choose to impose a price ceiling or price floor? 

***11.Figure 6-31***

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a) **Refer to Figure 6-31.** If the government set a price ceiling at $9, would there be a shortage or surplus, and how large would be the shortage/surplus?

**Answer: Shortage of 6 units.**

QS=9

QD=-9+24=15

15-9=6.

b) **Refer to Figure 6-31.** If the government set a price ceiling at $15, would there be a shortage or surplus, and how large would be the shortage/surplus?

**Answer:** A price ceiling at $15 would not be binding, so there would be neither a shortage or a surplus.

d) **Refer to Figure 6-31.** If the government set a price ceiling at $8, would there be a shortage or surplus, and how large would be the shortage/surplus?

**Answer**: **A price ceiling at $8 would result in a shortage of 8 units.**

QS=8

QD=-8+24=16

16-8=6.

e) **Refer to Figure 6-31.** If the government set a price floor at $15, would there be a shortage or surplus, and how large would be the shortage/surplus?

**Answer**: **surplus of 6 units.**

QS=15

QD=-15+24=9

15-9=6.

f) **Refer to Figure 6-31.** If the government set a price floor at $9, would there be a shortage or surplus, and how large would be the shortage/surplus?

**Answer**: A price floor at 9 would not be binding, so there would be neither a shortage nor a surplus.

g) **Refer to Figure 6-31.** If the government set a price floor at $17, would there be a shortage or surplus, and how large would be the shortage/surplus?

**Answer**: A price floor at $17 would result in a surplus of 10 units.

***12. Scenario 6-1***

Suppose that demand in the market for good X is given by the equation 

and that supply in the market for good X is given by the equation



a) **Refer to Scenario 6-1.** What are the equilibrium price and quantity in the market for good X?

**Answer:** 30-P=2P, **P=$10, Q=20 units.**

b) **Refer to Scenario 6-1.** If the government set a price ceiling at $8, would there be a shortage or surplus, and how large would be the shortage/surplus?

**Answer:** P=$8, QD=30-8=22, QS=2\*8=16.

22-16=6. **Shortage of 6.**

c) **Refer to Scenario 6-1.** If the government set a price ceiling at $12, would there be a shortage or surplus, and how large would be the shortage/surplus?

**Answer:** Price ceiling above the eq’m isn’t binding. Thus, no shortage noe surplus.

d) **Refer to Scenario 6-1.** If the government set a price floor at $13, would there be a shortage or surplus, and how large would be the shortage/surplus?

P=$13, QD=30-13=7, QS=2\*13=26.

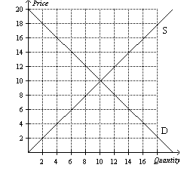
26-7=9. **Surplus of 9**.

e) **Refer to Scenario 6-1.** If the government set a price floor at $7, would there be a shortage or surplus, and how large would be the shortage/surplus?

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***13. Figure 6-33***

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a) **Refer to Figure 6-33.** Suppose a $3 per-unit tax is imposed on the sellers of this good. What price will buyers pay for the good after the tax is imposed?

b) **Refer to Figure 6-33.** Suppose a $3 per-unit tax is imposed on the sellers of this good. How much is the burden of this tax on the buyers in this market?

c) **Refer to Figure 6-33.** Suppose a $3 per-unit tax is imposed on the sellers of this good. What is the effective price that sellers will receive for the good after the tax is imposed?

d) **Refer to Figure 6-33.** Suppose a $3 per-unit tax is imposed on the sellers of this good. How much is the burden of this tax on the sellers in this market?

e) **Refer to Figure 6-33.** Suppose a $4 per-unit tax is imposed on the sellers of this good. How many units of this good will be sold after the tax is imposed?

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14.In a particular market, market demand is given by the equation



and market supply is given by the equation



Suppose a per-unit tax is imposed that reduces the number of units bought and sold in the market to 25 units. What is the size of the tax, and who bears the greater burden of the tax, buyers or sellers?

15. Scenario 8-3

Suppose the market demand and market supply curves are given by the equations: 

a) **Refer to Scenario 8-3.** What are the equilibrium price and equilibrium quantity in this market?

b) **Refer to Scenario 8-3**. Suppose that a tax of *T* is placed on buyers so that the demand curve becomes:



What price will sellers receive and what price will buyers pay after the tax is imposed?

c) **Refer to Scenario 8-3**. Suppose that a tax of *T* is placed on buyers so that the demand curve becomes:



What quantity will be bought and sold after the tax is imposed?

d) **Refer to Scenario 8-3**. Suppose that a tax of *T* is placed on buyers so that the demand curve becomes:



How much tax revenue will be collected after this tax is imposed?

e) **Refer to Scenario 8-3**. Suppose that a tax of *T* is placed on buyers so that the demand curve becomes:



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What will be the deadweight loss from this tax?

f) **Refer to Scenario 8-3.** Suppose that a tax of *T* is placed on buyers so that the demand curve becomes:



If *T =* 40, what price will buyers pay and what price will sellers receive?

g) **Refer to Scenario 8-3**. Suppose that a tax of *T* is placed on buyers so that the demand curve becomes:



If *T =* 40, how many units will be bought and sold after the tax is imposed?

h) **Refer to Scenario 8-3**. Suppose that a tax of *T* is placed on buyers so that the demand curve becomes:



If *T =* 40, how much tax revenue will be collected from this tax?

i) **Refer to Scenario 8-3**. Suppose that a tax of *T* is placed on buyers so that the demand curve becomes:



If *T =* 40, how much is the burden of the tax on the buyers and on the sellers?

j) **Refer to Scenario 8-3**. Suppose that a tax of *T* is placed on buyers so that the demand curve becomes:



If *T =* 40, how much will be the deadweight loss from this tax?

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16.Suppose that instead of a supply-demand diagram, you are given the following information:

*Q*s = 100 + 3*P Q*d = 400 - 2*P*

From this information compute equilibrium price and quantity. Now suppose that a tax is placed on buyers so that

*Q*d = 400 - 2(*P* + *T*).

If T = 15, solve for the new equilibrium price and quantity. (Note: *P* is the price received by sellers and *P* + *T* is the price paid by buyers.) Compare these answers for equilibrium price and quantity with your first answers. What does this show you?

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