

CHAPTER 5: ELASTICITY

SECTION 5.1 PRICE ELASTICITY OF DEMAND

1.
 - a. Chevrolets (more substitutes). Chevrolets have more substitutes than cars in general since any other brand is a good substitute.
 - b. Housing (greater share of budget). The price elasticity of demand for housing will be greater than for salt because of the large role housing plays in the household budget.
 - c. Natural gas over the course of a year. Natural gas has a more price-elastic demand in the long run since this gives consumers time to adjust their habits and complementary capital to any change. Also, the price elasticity of demand for a product will increase as more and better substitutes are available.
2. Demand would be relatively more inelastic if your work presentation is in two hours, as opposed to next week. If your presentation needs to be copied and bound within two hours, fewer alternatives are available to you. The quantity of copying and binding services that you demand will be less sensitive to changes in price than if you had all week to search for better prices.
3.
 - a. Demand for Paul Mitchell Shampoo is likely more elastic than is demand for shampoo in general. There are more substitutes available for a particular brand of shampoo than there are substitutes for shampoo generally.
 - b. The urgent need to travel quickly and on short notice to visit an ill family member makes demand relatively more inelastic than that for vacation air travel.
 - c. Elasticity of demand is likely much greater for apartment rentals. The rent on an apartment comprises a much larger portion of one's annual budget than do paper clips.
 - d. More substitutes are generally available for generic aspirin than for prescription heart medication. Therefore, the elasticity of demand for generic aspirin will be greater than that for heart medicine.
4.
 - a. The elasticity of demand would equal 1.
 - b. The elasticity of demand would equal 2.
 - c. The elasticity of demand would equal 0.5.
5. The average of prices and quantities demanded does not change when the direction of movement is reversed, so the percentage changes in price and quantity demanded do not change. However, when the initial price and quantity demanded are used for calculating the percentage changes, a movement down along a demand curve starts with a higher initial price and lower initial quantity demanded than the same movement up along it, changing the percentage changes.
6. There are more good substitutes for a more narrowly defined good than for the broader category of which it is a part.
7. If the price increases by 10 percent, quantity demanded will fall by 15 percent when the elasticity of demand for hamburgers equals -1.5. Hamburger sales will decline by approximately 6000 (15 percent of 40 000). If the price of hamburgers decreases by 5 percent, then quantity demanded will increase by approximately 3000 hamburgers (7.5 percent of 40 000).

8. $E_D = \frac{\frac{500}{850}}{\frac{-3}{4.5}} = 0.88$

$E_D = \frac{\% \Delta \text{ in } QD}{\% \Delta \text{ Price}}$

$-1.5 = \frac{x}{+10\%}$

$-1.5 = \frac{x}{-5\%}$

$x = -15\% \times 40K = 6K$

$x = +7.5\% \times 40K = 3K$

$\frac{6+3}{(6+3)/2} = \frac{-3}{4.5}$

4a.

	Price	Qty	
A	\$42	19	$(Qty_A - Qty_B) / \text{Midpoint } Q \div (Price_A - Price_B) / \text{Mid } P$
B	\$38	21	
Mid point	$\frac{42+38}{2}$	$(19+21)/2$	
	40	20	

$$\frac{(19-21)/20}{-4/40} = \frac{-2/20}{-4/40} = 0.1 \div 0.1 = 1$$

b.

	Price	Qty	
A	42	27	$(27-33)/30 \div 4/40$
B	38	33	
Mid.	40	30	

$$\frac{-6/30}{0.2} = \frac{-4/40}{0.1} = 2$$

c.

	Price	Qty	
A	42	195	$(195-205)/200 \div 0.1$
B	38	205	
Mid	40	200	

$$\frac{-10/200}{0.1} = 0.5$$

* Price elasticity is usually negative. Follows law of Demand $P \uparrow \Rightarrow Q \downarrow$
 \therefore % changes can be positive or negative but elasticity is always an absolute value.

9.

	Price	Qty
	+2/4	-600/1200
	6/12	2/4
	0.5	0.5 = 1

Chapter 5

9. If the price rises from \$3 to \$5, the change in price is \$2. Using the midpoint technique, the midpoint price (\$4) is used to calculate the percentage change in price. It will be $(2/4 \times 100\text{percent}) = 50\text{percent}$. Similarly, the percentage change in quantity is based on the change in quantity (-600) divided by the midpoint (1200) or -50percent. The elasticity of demand is 1.
10. Demand is unit elastic if Isabella always spends the same dollar amount on roses, regardless of the price.
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