Activity 1
What is Price Elasticity of Demand?

Part I: Overview

According to the law of **demand**, quantity demanded decreases when price increases. When price decreases, quantity demanded increases. However, it is not enough to know in what direction quantity demanded changes in response to price changes. It is also important to know *how much* the quantity demanded changes. A business may decide not to increase the price of its product if consumers will buy *much less* of it at the higher price. But a business will certainly increase the price of its product if consumers will buy only a *little less* of it at the higher price.

The measure of how much quantity demanded changes relative to price changes is called **price elasticity of demand**. If the quantity demanded changes more than price, in percentage terms, demand is elastic. Elastic demand means the quantity demanded is very responsive to changes in price. If the quantity demanded changes relatively little, the good or service has an inelastic demand.

Several factors determine whether the demand for a product is elastic or inelastic in some price range.

- Products that have many substitutes tend to have an elastic demand because it is easy to buy a substitute when its price rises. A product that has few substitutes tends to have an inelastic demand, because buyers don't have as many alternatives from which to choose.

- Goods and services that take a large portion of a consumer's budget tend to have an elastic demand because the price change has a bigger impact on the consumer's overall spending. Goods and services that represent a small portion of a consumer's budget tend to have an inelastic demand, because the impact of price changes for these products has a much smaller effect on the consumer's overall spending.

- The more time consumers have to adjust to price changes, the more they will increase purchases in response to price decreases, and decrease purchases in response to price increases. Therefore, long-run demand tends to be more elastic than short-run demand.

Activity 1 (Continued)

Part II: Elastic or Inelastic?

Instructions: Determine whether the demand for the following items is price elastic or inelastic. Write your answer on the line after the item. Then write the reasons for your answer.

A. Salt _____ Why? _____

B. New cars _____ Why? _____

C. Pork chops _____ Why? _____

D. European vacation _____ Why? _____

E. Insulin _____ Why? _____

F. Insulin at one of four drug stores in a shopping mall _____ Why? _____

G. Gasoline purchased one day after a 20 percent price increase _____ Why? _____

H. Gasoline purchased one year after a 20 percent price increase _____ Why? _____

Activity 2
Price Elasticity and the Total Revenue Test

Part I: Overview

One way to determine price elasticity of demand is to examine what happens to total revenue when the price for a product changes. **Total revenue** is price times quantity demanded:

price	×	quantity demanded	=	total revenue
$10	×	150 items	=	$1,500

When the price for a good or service changes, the change in total revenue depends on the *relative* size of the changes in price and quantity demanded. First there is a *price effect* – a change in the amount the seller receives for each unit sold. The price effect of a price increase is to raise total revenue. The price effect of a decrease in price is to lower total revenue. However, there is also a *quantity effect*. Higher prices result in a decrease in quantity demanded, which means revenues are collected on fewer units. Therefore, the quantity effect of a price increase is to lower total revenue. On the other hand, when price decreases, quantity demanded increases, so revenues are collected on more units. That means the quantity effect of a price decrease is to increase total revenue.

The price effect and quantity effect work in opposite directions, so total revenue may go up, down, or remain the same whenever price changes. If the price effect is greater than the quantity effect, demand will be inelastic. If the quantity effect is greater than the price effect, demand will be elastic. By comparing the directions of the price and total revenue changes, you can determine whether the price effect or quantity effect is larger, and from that determine whether demand is elastic or inelastic. If total revenue remains constant due to exactly offsetting changes in price and quantity, demand is said to be unitary elastic.

Price	Total Revenue	Elasticity of Demand
↑	↓	elastic
↓	↑	elastic
↑	↑	inelastic
↓	↓	inelastic
↑ or ↓	=	unitary elastic

Part II:

To make sure you understand these points, complete each problem below, and circle the correct arrows in part 3 of each question. Then write whether demand is elastic or inelastic in this range of prices. The first problem is completed for you.

A. *Price rises* from $5 to $6. Quantity demanded decreases from 15 to 10.

1. Old price × old quantity demanded = old total revenue
   5 × 15 = 75
2. New price × new quantity demanded = new total revenue
   6 × 10 = 60
3. P ↓(↑) TR (↓)↑ elastic

Activity 2 (Continued)

B. *Price falls* from $10 to $9. Quantity demanded increases from 100 to 110.

1. Old price × old quantity demanded = old total revenue

   _____ _____ _____

2. New price × new quantity demanded = new total revenue

   _____ _____ _____

3. P ↓ ↑ TR ↓ ↑ _____

C. Price rises from $6 to $9. Quantity demanded decreases from 60 to 50.

1. Old price × old quantity demanded = old total revenue

   _____ _____ _____

2. New price × new quantity demanded = new total revenue

   _____ _____ _____

3. P ↓ ↑ TR ↓ ↑ _____

D. Price falls from $6.50 to $6.00. Quantity demanded increases from 100 to 200.

1. Old price × old quantity demanded = old total revenue

   _____ _____ _____

2. New price × new quantity demanded = new total revenue

   _____ _____ _____

3. P ↓ ↑ TR ↓ ↑ _____

E. Price falls from $4.00 to $3.75. Quantity demanded increases from 300 to 400.

1. Old price × old quantity demanded = old total revenue

   _____ _____ _____

2. New price × new quantity demanded = new total revenue

   _____ _____ _____

3. P ↓ ↑ TR ↓ ↑ _____

F. Why do price and total revenue go in opposite directions when the demand for the good is elastic? _____

_____

_____

G. Why do price and total revenue go in the same direction when the demand for the product is inelastic? _____

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