Chapter 4, Section 3
Applying the Principles (KEY)

Elasticity versus Inelasticity

According to the law of demand, when price rises, quantity demanded falls and when price falls, quantity demanded rises. Elasticity of demand is a measure of how much the quantity demanded of a good rises or falls due to a change in the price of the good. You can think of elastic demand as being like an elastic band - the quantity demanded of the good will stretch freely when pulled by a change in the good's price. Inelastic demand is more like a rope - the quantity demanded of the good will not stretch easily when pulled by a change in the good's price.

1. If the price of a good with elastic demand increases, which of the following describes the effect on the quantity demanded of the good? _____
   A. increases a little
   B. increases a lot
   C. decreases a little
   D. decreases a lot

2. If the price of a good with inelastic demand increases, which of the following describes the effect on the quantity demanded of the good? _____
   A. increases a little
   B. increases a lot
   C. decreases a little
   D. decreases a lot

In questions 3-6, the four factors that determine the elasticity of demand are listed. For each factor, fill in the blanks to describe how the factor affects the elasticity of demand for a good.

3. Factor: Number of Substitutes
   Description: More available substitutes tend to make demand for a good _______________ (elastic or inelastic); fewer available substitutes tend to make demand for a good _______________ (elastic or inelastic).

4. Factor: Luxuries versus Necessities
   Description: The demand for _______________ (luxuries or necessities) tends to be elastic; the demand for _______________ (luxuries or necessities) tends to be inelastic.

5. Factor: Percentage of Income Spent on the Good
   Description: The demand for goods that take a large _______________ (large or small) percentage of income tends to be elastic; the demand for goods that take a relatively _______________ (large or small) percentage of tends to be inelastic.

6. Factor: Time
   Description: The less time you have to respond to a price change in a good, the more likely it is that your demand is going to be _______________ (elastic or inelastic).

Considering the factors you listed in questions 7 - 9, identify the demand for the goods in questions 50 - 52 as elastic, inelastic, or unit-elastic. Explain the reason for each choice.

7. T-Bone Steak: Demand for a T-bone steak would most likely be ELASTIC because there are available SUBSTITUTES, it is a LUXURY good, and it takes a relatively LARGE portion of income.
8. **New Sport Utility Vehicle:** Demand for a new SUV would most likely be **ELASTIC** because there are available **SUBSTITUTES**, it is a **LUXURY** good, and it takes a relatively **LARGE** portion of income.

9. **Insulin:** Demand for insulin would be **INELASTIC** because there are no **SUBSTITUTES** and it is an absolute **NECESSITY** for a diabetic regardless of the percentage of income spent.

In each of the cases described in questions 10 - 12, identify whether the demand for the good is elastic, inelastic, or unit-elastic. Write your answers on the lines provided.

10. **ELASTIC** The price of corn rises 5%, and the quantity demanded falls 15%.
11. **UNIT-ELASTIC** The price of bagels rises 8%, and the quantity demanded falls 8%.
12. **INELASTIC** The price of telephones rises 10%, and the quantity demanded falls 2%.

**Elasticity and Total Revenue**

Elasticity of demand matters to sellers of goods because it relates to their total revenue (Price x Quantity sold = Total revenue). Questions 13 - 19 relate to how the elasticity of demand for a good affects a seller's total revenue when the seller changes the price of the good. Fill in each blank with the correct answer.

13. If demand for a good is **elastic** and price increases, then total revenue will ___________________ (increase, decrease or stay the same).
14. If demand for a good is **elastic** and price decreases, then total revenue will ___________________ (increase, decrease or stay the same).
15. If demand for a good is **inelastic** and price increases, then total revenue will ___________________ (increase, decrease or stay the same).
16. If demand for a good is **inelastic** and price decreases, then total revenue will ___________________ (increase, decrease or stay the same).
17. If demand for a good is **unit-elastic** and price increases, then total revenue will ___________________ (increase, decrease or stay the same).
18. If demand for a good is **unit-elastic** and price decreases, then total revenue will ___________________ (increase, decrease or stay the same).
19. If a seller would like to increase revenue, the seller should (a) increase the price of the good if the demand for the good is ___________________ (elastic or inelastic) or (b) decrease the price of the good if the demand for the good is ___________________ (elastic or inelastic).

In each of questions 23 - 25, complete the table to calculate the total revenue for the good. Then fill in the blanks in the question following the table to summarize the results in each case.

20. When Edith increased the price of a good from $2 to $3, the quantity demanded rose from 100 to 110.

<table>
<thead>
<tr>
<th>Price</th>
<th>X</th>
<th>Quantity sold</th>
<th>=</th>
<th>Total revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Original</td>
<td>$2</td>
<td>100</td>
<td>=</td>
<td>$200</td>
</tr>
<tr>
<td>New</td>
<td>$3</td>
<td>110</td>
<td>=</td>
<td>$330</td>
</tr>
</tbody>
</table>

So, because revenue ________________ (rose or fell) when the price ________________ (rose or fell), demand for the good must be ________________ (elastic or inelastic).
21. When Renaldo increased the price from $10 to $12, the quantity demanded fell from 80 to 40.

<table>
<thead>
<tr>
<th>Price</th>
<th>X</th>
<th>Quantity sold</th>
<th>= Total revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Original</td>
<td>$10</td>
<td>80</td>
<td>$800</td>
</tr>
<tr>
<td>New</td>
<td>$12</td>
<td>40</td>
<td>$480</td>
</tr>
</tbody>
</table>

So, because revenue ________ (rose or fell) when the price ________ (rose or fell), demand for the good must be ____________ (elastic or inelastic).

22. When Keiko decreased the price from $150 to $125, the quantity demanded rose from 60 to 120.

<table>
<thead>
<tr>
<th>Price</th>
<th>X</th>
<th>Quantity sold</th>
<th>= Total revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Original</td>
<td>$ ____</td>
<td>_____</td>
<td>$9000</td>
</tr>
<tr>
<td>New</td>
<td>$ ____</td>
<td>_____</td>
<td>$15000</td>
</tr>
</tbody>
</table>

So, because revenue ________ (rose or fell) when the price ________ (rose or fell), demand for the good must be ____________ (elastic or inelastic).

Elasticity of Demand in Graphs

In questions 23 - 25, use your understanding of elasticity of demand to decide whether the graph shows a good with elastic demand or a good with inelastic demand or a good with unit-elastic demand.

23. INELASTIC

24. ELASTIC

25. UNIT-ELASTIC

Elasticity of Supply in Graphs

In questions 23 - 25, use your understanding of elasticity of demand to decide whether the graph shows a good with elastic demand or a good with inelastic demand or a good with unit-elastic demand.

26. ELASTIC

27. UNIT-ELASTIC

28. INELASTIC