Answers to End-of-Chapter Review Questions

1. The quantity sold is likely to change with the price change—to go up or down. If demand is price inelastic, so buyers are not very responsive to price, revenue will change in the same direction as the price (that is, revenues will rise with a price rise, and fall with a fall in price.) If demand is price elastic, so buyers are very responsive to price revenue will change in the opposite direction (that is, revenues will fall with a price rise, and rise with a fall in price).

2. The figure could look like Figure 10.2 or 10.3, with the larger rectangle labeled as showing larger revenues.

3. Demand for a good may be elastic because: there are a number of good close substitutes for the good, the good is merely wanted rather than needed, or the good makes up a large part of the budget of the buyer. Demand for a good may be inelastic because there are very few good close substitutes for the good, the good is considered necessary to buyers, or the good is a very small part of a buyer’s budget.
4. A graph with both a relatively elastic and inelastic demand curve is given below.

5. A graph with both a perfectly elastic and perfectly inelastic demand curve is given below.

6. The seller has more power when he or she faces a perfectly inelastic demand—regardless of the price charged, consumers will buy the same quantity.

7. The equation for the price elasticity of demand is:

\[
price\%\text{ elasticity of demand} = \frac{\%\text{ change in quantity demanded}}{\%\text{ change in price}}
\]
8. The equation for calculating the percent change in revenue, given the percent changes in quantity demanded and in price is:

\[
\% \text{ change in revenue} = \% \text{ change in quantity demanded} + \% \text{ change in price}
\]

9. a. When the price elasticity of demand is zero, quantity will not change with price changes and revenue will change by the same percentage as price.
   b. When the price elasticity of demand is between zero and one, quantity will change by a smaller percentage (in the opposite direction) than price. Revenue will change in the same direction as price.
   c. When the price elasticity of demand is one, quantity will change by the same percentage as price (but in the opposite direction). Revenue will not change as price changes.
   d. When the price elasticity of demand is greater than one, quantity will change by a greater percentage than price (in the opposite direction). Revenue will change in the opposite direction as price.

10. The equation for calculating percentage change according to the conventional method is:

\[
\frac{\text{[(new number} - \text{base number)}]}{\text{base number}} \times 100
\]

Using the mid-point method, it is:

\[
\frac{\text{[(new number} - \text{base number)}/(\text{new number} + \text{base number})/2]}{\times 100}
\]

Using the log-difference method, it is:

\[
[\ln(\text{new number}) - \ln(\text{base number})] \times 100
\]

11. A graph with both a relatively elastic and inelastic supply curve is given below.
12. The equation for calculating the price elasticity of supply is:

\[
price \text{ elasticity of supply} = \frac{\% \text{ change in quantity supplied}}{\% \text{ change in price}}
\]

13. Examples of normal goods include holiday parties and high-quality paper. An example of an inferior good is rat poison.

14. The equation for calculating the income elasticity of demand is:

\[
income \text{ elasticity of demand} = \frac{\% \text{ change in quantity demanded}}{\% \text{ change in income}}
\]

15. One cannot illustrate the income elasticity of demand using a single demand curve because a change in income results in a shift in the demand curve.

16. The income effect implies that a change in the price of a good effectively reduces (or increases) the overall buying potential of a consumer. The substitution effect means that the relative prices of other goods have changed to the consumer. Both of these effects influence buyer behavior.

17. The long-run elasticity of demand for a good may differ from the short-run elasticity because adjustments take time and the availability of substitutes may change over time.