Appendix to Chapter 1

Working with Graphs

Teaching Objectives

The primary objective of this appendix is to show how to interpret and construct graphs. It provides the groundwork for interpreting points on a graph as well as for explaining what causes a graph to shift. It accomplishes this in three consecutive steps. First, it explains how to read graphs. Second, it explains how to construct a graph. Third, it introduces the production possibilities curve, a commonly used tool in economics, and offers a useful exercise employing the example of gains from trade.

Unique features of this appendix include showing how graphs depict relationships between variables, how to construct a graph from a table, and how to illustrate a shift in a curve due to a variable not represented on the graph.

This is an important appendix given the relatively heavy usage of graphs throughout the text.

Key Terms

production possibilities curve (PPC)

Lecture Outline and Teaching Strategies

## Constructing and Interpreting a Graph

Use the data in Figure 1.2 (demand schedule) to create and interpret a graph. Explain cause and effect, and use the convention of price on the vertical and quantity on the horizontal axes. Draw and explain a shift outward of the demand curve (Figure 1.3).

**Teaching Strategy:** Draw the Pythagorean Theorem and compare it to a demand curve, asking the question: “What assumptions are made in the Pythagorean Theorem (right angle and linear plane)?” By contrasting the two graphs, reinforce the concept that economics is not as exact as mathematics because it is analyzing people behavior.

# Answers to Exercises

1.

a.



b. When the price is $550, the quantity sold is 1,100 units.

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d. When 1,100 units are sold, the total revenue is $605,000. There will be no change in total revenue if the price is lowered between $550 and $500. Total revenue will fall if the price is below $500.

2.

a.



. Haiti has a comparative advantage in the production of health care services. It gives up just 3 tons of food to provide 500 people with health care, while Cuba gives up 7 tons of food to provide 500 people with health care. Conversely, Cuba has a comparative advantage in food production. It gives up providing 500 people with health care if it produces 7 tons of food, while Haiti gives up providing 1,000 people health care if it produces 10 tons of food. By specializing and trading with each other, each country can get more than they could without specialization and trade.

. Haiti would specialize in health care services, while Cuba would specialize in producing food.

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. The marginal opportunity cost of 25 additional units of health care are *A* to *B*, 10 units of all other goods; *B* to *C*, 20 units of all other goods; *C* to *D*, 30 units of all other goods; and *D* to *E*, 40 units of all other goods.

b. Producing at combination *A* for nation 1 means producing 100 units of all other goods than health care, and at combination *E* 100 units of health care. For nation 2, producing at combination *A* means producing 50 units of all other goods than health care, and at combination *E* 65 units of health care. It is more costly for nation 1 to produce health care than for nation 2; 100/100 is its cost. Thus, nation 2 should specialize in producing health care, and nation 1 in producing all other goods.