Appendix to CHAPTER

Working with Graphs

Overview and Objectives

*The primary objective of this appendix is to show how to interpret and construct graphs. First, an explanation on how to read graphs is presented. The second part of this appendix explains how to construct a graph. The third part pertains to slopes.*

After reading and reviewing this appendix, the student should be able to:

. Understand three types of graphs used by economists.

. Determine dependent and independent variables.

. Distinguish between direct (positive) and inverse (negative) relationships among variables.

. Construct a graph from a table.

. Determine slopes of curves.

Key Term Review

independent variable

dependent variable

direct, or positive, relationship

inverse, or negative, relationship

slope

Lecture Outline and Teaching Strategies

. Reading Graphs

. Relationships between variables

. Independent and dependent variables

. Direct and inverse relationships

II. Constructing a Graph

. The axes

. Constructing a graph from a table

. Interpreting points on a graph

. Shifts of curves

III. Slopes

. Positive and negative slopes

. Equations

Answers to Exercises

. .

|  |  |  |
| --- | --- | --- |
|  | Pesos in Circulation (billions) | Peso Price of a Dollar |
| 1990 | 19.6 | 2.8126 |
| 1991 | 27.0 | 3.0184 |
| 1992 | 36.2 | 3.0949 |
| 1993 | 42.0 | 3.1156 |
| 1994 | 47.2 | 3.3751 |
| 1995 | 56.9 | 6.4194 |
| 1996 | 66.8 | 7.5994 |
| 1997 | 84.0 | 8.5850 |
| 1998 | 109.0 | 9.9680 |
| 1999 | 131.0 | 9.4270 |
| 2000 | 188.8 | 9.6420 |
| 2001 | 209.0 | 9.2850 |
| 2002 | 225.0 | 9.5270 |
| 2003 | 264.0 | 10.9000 |
| 2004 | 303.0 | 11.4000 |
| 2005 | 340.0 | 10.4750 |
| 2006 | 380.0 | 10.87 |
| 2007 | 450.0 | 10.86 |
| 2008 | 495.0 | 13.53 |
| 2009 | 578.0 | 13.76 |

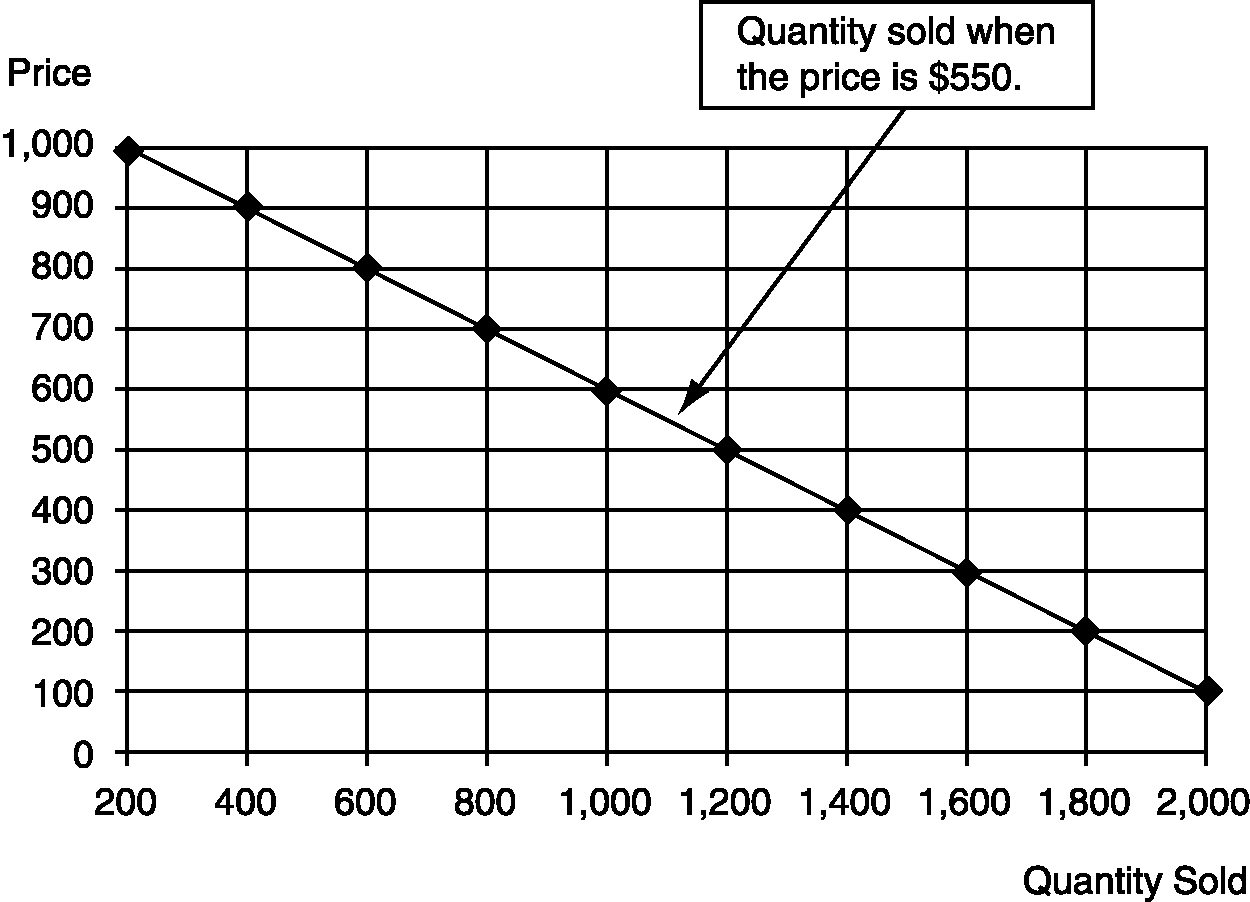
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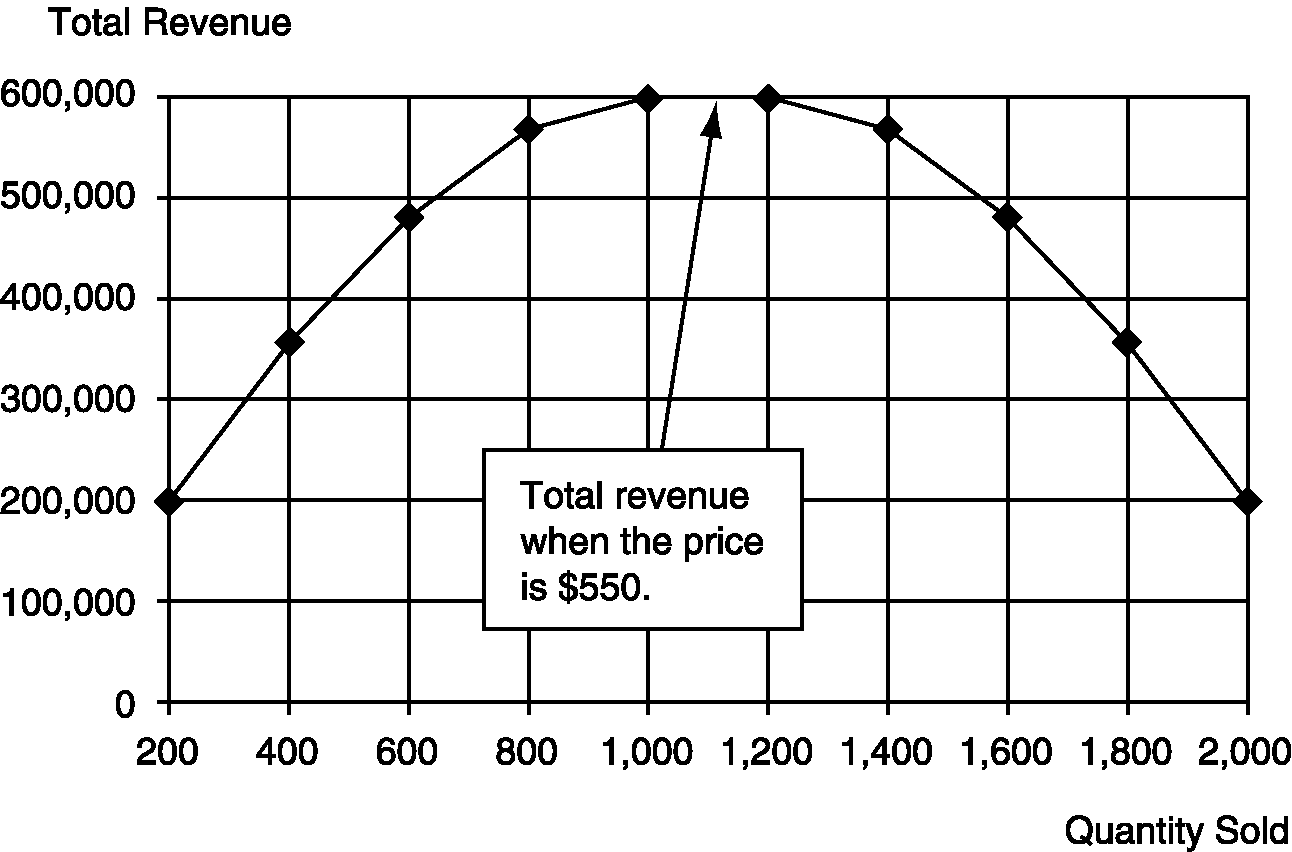
. In part a the independent variable is the date and the dependent variables are the new pesos in circulation and the peso price of a dollar. In part b the independent variable is new pesos in circulation and the dependent variable is the peso price of a dollar.

. There is a direct relationship between the dependent and independent variables in all three cases.

. a and c.

|  |  |  |
| --- | --- | --- |
| Quantity Sold | Price | Total Revenue (thousands of dollars) |
| 200 | 1,000 | 200 |
| 400 | 900 | 360 |
| 600 | 800 | 480 |
| 800 | 700 | 560 |
| 1,000 | 600 | 600 |
| 1,200 | 500 | 600 |
| 1,400 | 400 | 560 |
| 1,600 | 300 | 480 |
| 1,800 | 200 | 360 |
| 2,000 | 100 | 200 |





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

d. When 1,100 units are sold, the total revenue is $600,000. 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.