CHAPTER **1** | Economics:

Foundations and Models

Solutions to Chapter 1 Appendix

**1A.1** **a.** The relationship is negative because as price decreases, the quantity of pies purchased increases.

 **b.**



 **c.** The slope = ∆*y*/∆*x* = rise/run = −1/1 = –1.

**1A. 2**



**1A.3** Answers will vary somewhat depending on the values determined from the time-series graph. The calculations below use Ford sales rounded to the nearest millions as shown in the table below.

|  |  |
| --- | --- |
| **Year** | **Ford’s Auto Sales** |
| 2001 | 7.0 |
| 2002 | 7.0 |
| 2003 | 6.7 |
| 2004 | 6.8 |
| 2005 | 6.8 |
| 2006 | 6.6 |
| 2007 | 6.6 |
| 2008 | 5.4 |
| 2009 | 4.9 |
| 2010 | 5.5 |
| 2011 | 5.7 |
| 2012 | 5.7 |

**Period Percentage Change**

2001 to 2002 [(7.0 – 7.0)/7.0] × 100 = 0.0%

2002 to 2003 [(6.7 – 7.0)/7.0] × 100 = –4.3%

2003 to 2004 [(6.8 – 6.7)/6.7] × 100 = 1.5%

2004 to 2005 [(6.8 – 6.8)/6.8] × 100 = 0.0%

2005 to 2006 [(6.6 – 6.8)/6.8] × 100 = −2.9%

2006 to 2007 [(6.6 – 6.6)/6.6] × 100 = 0.0%

2007 to 2008 [(5.4 – 6.6)/6.6] × 100 = −18.2

2008 to 2009 [(4.9 – 5.4)/5.4] × 100 = −9.3%

2009 to 2010 [(5.5 – 4.9)/4.9] × 100 = 12.2%

2010 to 2011 [(5.7 – 5.5)/5.5] × 100 = 3.6%

2011 to 2012 [(5.7 – 5.7)/5.7] × 100 = 0.0%

We can conclude that sales fell at the fastest rate between 2007 and 2008.

**1A.4** [($14,418 − $14,834)/$14,834] × 100 = −2.8%

The percentage change in real GDP from one year to the next is the economy’s growth rate.

**1A.5 a.**



 **b.** At $2.50, the total revenue equals rectangles *A* + *B* = $250,000 (because $2.50 × 100,000 = $250,000). At $1.25, the total revenue equals rectangles *B* + *C* = $250,000 (because $1.25 × 200,000 = $250,000).

**1A.6**  The triangle’s area = (0.5) × (175,000 – 115,000) × ($2.25 − $1.50) = 0.5 × 60,000 × $0.75 = $22,500.

**1A.7**  The slope is calculated using the formula:



 At point *A*: rise = 300 − 175 = 125, run = 7 − 5 = 2. Therefore, the slope = 125/2 = 62.5.

 At point *B*: rise = 900 − 700 = 200, run = 14 – 12 = 2. Therefore, the slope = 200/2 = 100.