< Objective 1 >
Write each number in expanded form.

1. 456
2. 637
3. 5,073
4. 20,721

< Objective 2 >
Give the place values for the indicated digits.

5. 4 in the number 416
6. 3 in the number 38,615
7. 6 in the number 56,489
8. 4 in the number 427,083
9. In the number 43,729
   (a) what digit tells the number of thousands?
   (b) what digit tells the number of tens?
10. In the number 456,719
    (a) what digit tells the number of ten thousands?
    (b) what digit tells the number of hundreds?
11. In the number 1,403,602
    (a) what digit tells the number of hundred thousands?
    (b) what digit tells the number of ones?
12. In the number 324,678,903
    (a) what digit tells the number of millions?
    (b) what digit tells the number of ten thousands?

< Objective 3 >
Write the word name for each of the following.

13. 5,618
14. 21,812
15. 200,304
16. 103,900

< Objective 4 >
Write each of the following in the standard form of a number.

17. Two hundred fifty-three thousand, four hundred eighty-three
18. Three hundred fifty thousand, three hundred fifty-nine
19. Five hundred two million, seventy-eight thousand
20. Four billion, two hundred thirty million

Name __________________________
Section _______ Date _______

Answers
1. __________________________
2. __________________________
3. __________________________
4. __________________________
5. __________________________
6. __________________________
7. __________________________
8. __________________________
9. __________________________
10. __________________________
11. __________________________
12. __________________________
13. __________________________
14. __________________________
15. __________________________
16. __________________________
17. __________________________
18. __________________________
19. __________________________
20. __________________________

SECTION 1.1 7
Answers


22. **Science and Medicine** Scientific speculation is that the universe originated in the explosion of a primordial fireball approximately fourteen billion years ago.

23. **Social Science** The population of Kansas City, Missouri, in 2000 was approximately four hundred forty-one thousand, five hundred.

24. **Social Science** The Nile river in Egypt is about four thousand, one hundred forty-five miles long.
< Objective 2 >
Name the property of addition that is illustrated. Explain your choice of property.

1. \( 5 + 8 = 8 + 5 \)
2. \( 2 + (7 + 9) = (2 + 7) + 9 \)
3. \( (4 + 5) + 8 = 4 + (5 + 8) \)
4. \( 9 + 7 = 7 + 9 \)
5. \( 4 + (7 + 6) = 4 + (6 + 7) \)
6. \( 5 + 0 = 5 \)
7. \( 5 + (2 + 3) = (2 + 3) + 5 \)
8. \( 3 + (0 + 6) = (3 + 0) + 6 \)

< Objectives 3, 6 >
Perform the indicated addition.

9. \[
\begin{array}{c}
2,792 \\
+ 205
\end{array}
\]
10. \[
\begin{array}{c}
5,463 \\
+ 435
\end{array}
\]
11. \[
\begin{array}{c}
2,345 \\
+ 6,053
\end{array}
\]
12. \[
\begin{array}{c}
3,271 \\
+ 4,715
\end{array}
\]
13. \[
\begin{array}{c}
2,531 \\
+ 5,354
\end{array}
\]
14. \[
\begin{array}{c}
5,003 \\
+ 4,205
\end{array}
\]
15. \[
\begin{array}{c}
21,314 \\
+ 43,042
\end{array}
\]
16. \[
\begin{array}{c}
12,325 \\
+ 35,403
\end{array}
\]
17. \[
\begin{array}{c}
3,490 \\
548 \\
+ 25
\end{array}
\]
18. \[
\begin{array}{c}
678 \\
4,533 \\
+ 70
\end{array}
\]
19. \[
\begin{array}{c}
2,289 \\
38 \\
578 \\
+ 3,489
\end{array}
\]
20. \[
\begin{array}{c}
3,678 \\
259 \\
27 \\
+ 2,356
\end{array}
\]
21. \[
\begin{array}{c}
23,458 \\
+ 32,623
\end{array}
\]
22. \[
\begin{array}{c}
52,591 \\
+ 59,739
\end{array}
\]

< Objective 4 >
23. In the statement \( 5 + 4 = 9 \)
   5 is called an \underline{adder}.
   4 is called an \underline{addend}.
   9 is called the \underline{sum}.

24. In the statement \( 7 + 8 = 15 \)
   7 is called an \underline{adder}.
   8 is called an \underline{addend}.
   15 is called the \underline{sum}.
< Objectives 7, 8 >

Find the perimeter of each figure.

25.  
\[\text{5 ft} \quad \text{7 ft} \quad \text{4 ft} \quad \text{6 ft}\]

26.  
\[\text{4 in.} \quad \text{4 in.} \quad \text{4 in.} \quad \text{4 in.}\]

27.  
\[\text{6 yd} \quad \text{8 yd} \quad \text{7 yd}\]

28.  
\[\text{5 ft} \quad \text{6 ft} \quad \text{5 ft} \quad \text{6 ft} \quad \text{10 ft}\]

29.  
\[\text{3 in.} \quad \text{3 in.} \quad \text{10 in.} \quad \text{10 in.}\]

30.  
\[\text{8 yd} \quad \text{10 yd} \quad \text{5 yd}\]

31. In each of the following exercises, find the appropriate sum.
   
   (a) Find the number that is 356 more than 1,213.
   
   (b) Add 23, 2,845, 5, and 589.
   
   (c) What is the total of the five numbers 2,195, 348, 640, 59, and 23,785?
   
   (d) Find the number that is 34 more than 125.
   
   (e) What is 457 increased by 96?

32. In each of the following exercises, find the appropriate sum.
   
   (a) Find the number that is 567 more than 2,322.
   
   (b) Add 5,637, 78, 690, 28, and 35,589.
   
   (c) What is the total of the five numbers 3,295, 9, 427, 56, and 11,100?
   
   (d) Find the number that is 124 more than 2,351.
   
   (e) What is 926 increased by 86?

33. **Business and Finance** Tral bought a 1931 Model A for $15,200, a 1964 Thunderbird convertible for $17,100, and a 1959 Austin Healy Mark I for $17,450. How much did he invest in the three cars?
34. **Business and Finance** The following chart shows Family Video’s monthly rentals for the first 3 months of 2006 by category of film. Complete the totals.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Comedy</td>
<td>4,568</td>
<td>3,269</td>
<td>2,189</td>
<td></td>
</tr>
<tr>
<td>Drama</td>
<td>5,612</td>
<td>4,129</td>
<td>3,879</td>
<td></td>
</tr>
<tr>
<td>Action/Adventure</td>
<td>2,654</td>
<td>3,178</td>
<td>1,984</td>
<td></td>
</tr>
<tr>
<td>Musical</td>
<td>897</td>
<td>623</td>
<td>528</td>
<td></td>
</tr>
<tr>
<td>Monthly Totals</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

35. **Business and Finance** The following chart shows Regina’s Dress Shop’s expenses by department for the last 3 months of the year. Complete the totals.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Office</td>
<td>$31,714</td>
<td>$32,512</td>
<td>$30,826</td>
<td></td>
</tr>
<tr>
<td>Production</td>
<td>85,146</td>
<td>87,479</td>
<td>81,234</td>
<td></td>
</tr>
<tr>
<td>Sales</td>
<td>34,568</td>
<td>37,612</td>
<td>33,455</td>
<td></td>
</tr>
<tr>
<td>Warehouse</td>
<td>16,588</td>
<td>11,368</td>
<td>13,567</td>
<td></td>
</tr>
<tr>
<td>Monthly Totals</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

36. **Social Science** The following table ranks the top 10 areas for women-owned firms in the United States.

<table>
<thead>
<tr>
<th>Metro Area</th>
<th>Number of Firms</th>
<th>Employment</th>
<th>Sales (in millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Los Angeles—Long Beach, Calif.</td>
<td>360,300</td>
<td>1,056,600</td>
<td>$181,455,900</td>
</tr>
<tr>
<td>New York</td>
<td>282,000</td>
<td>1,077,900</td>
<td>$193,572,200</td>
</tr>
<tr>
<td>Chicago</td>
<td>260,200</td>
<td>1,108,800</td>
<td>$161,200,900</td>
</tr>
<tr>
<td>Washington, D.C.</td>
<td>193,600</td>
<td>440,000</td>
<td>$56,644,000</td>
</tr>
<tr>
<td>Philadelphia</td>
<td>144,600</td>
<td>695,900</td>
<td>$90,231,000</td>
</tr>
<tr>
<td>Atlanta</td>
<td>138,700</td>
<td>331,800</td>
<td>$50,206,800</td>
</tr>
<tr>
<td>Houston</td>
<td>136,400</td>
<td>560,100</td>
<td>$78,180,300</td>
</tr>
<tr>
<td>Dallas</td>
<td>123,900</td>
<td>431,900</td>
<td>$63,114,900</td>
</tr>
<tr>
<td>Detroit</td>
<td>123,600</td>
<td>371,400</td>
<td>$50,060,700</td>
</tr>
<tr>
<td>Minneapolis—St. Paul, Minn.</td>
<td>119,600</td>
<td>337,400</td>
<td>$51,063,400</td>
</tr>
</tbody>
</table>

(a) How many firms in total are located in Washington, Philadelphia, and New York?

(b) What is the total number of employees in all 10 of the areas listed?

(c) What are the total sales for firms in Houston and Dallas?

(d) How many firms in total are located in Chicago and Detroit?
37. **NUMBER PROBLEM** The following sequences are called *arithmetic sequences.* Determine the pattern and write the next four numbers in each sequence.

(a) 5, 12, 19, 26, ____, ____, ____, ____
(b) 8, 14, 20, 26, ____, ____, ____, ____
(c) 7, 13, 19, 25, ____, ____, ____, ____
(d) 9, 17, 25, 33, ____, ____, ____, ____

38. **NUMBER PROBLEM** Fibonacci numbers occur in the sequence

1, 1, 2, 3, 5, 8, 13, 21, 34, 55, . . .

This sequence begins with the numbers 1 and 1 again, and each subsequent number is obtained by adding the two preceding numbers.

Find the next four numbers in the sequence.

39. **MANUFACTURING TECHNOLOGY** An inventory of steel round stock shows 248 feet (ft) of $\frac{1}{4}$ inch (in.), 124 ft of $\frac{1}{8}$ in., 428 ft of $\frac{1}{4}$ in., and 162 ft of $\frac{1}{2}$ in. How many total feet of steel round stock are in inventory?

40. **MANUFACTURING TECHNOLOGY** B & L Industries produces three different products. Orders for today are for 351 of product A, 187 of product B, and 94 of product C. How many total products need to be produced today to fill the orders?

41. **ALLIED HEALTH** The source-image receptor distance (SID) for radiographic images is the sum of the object-film distance (OFD) and the focus-object distance (FOD). Determine the SID if the distance from the object to the film is 8 inches (in.), and the distance from the object to the focus is 48 in.

42. **ALLIED HEALTH** Total lung capacity, measured in milliliters (mL), is the sum of the vital capacity and the residual volume. Determine the total lung capacity for a patient whose vital capacity is 4,500 mL and whose residual volume is 1,800 mL.