

Depths of Lakes

Name	Location	Depth (in feet)
Quesnel	British Columbia, Canada	515
Ohrid	Macedonia, Albania	508
Geneva	Switzerland, France	502
Loch Ness	Scotland, United Kingdom	436
Dead Sea	Jordan, Israel	387
Titicaca	Peru, Bolivia	351

Source: en.wikipedia.org/wiki/List_of_lakes_by_depth

- What is the depth of Lake Tahoe in California?
- Which lake is the deepest and what is its location?
- Write the depth of Crater Lake in words and in expanded notation.

Solution

- 989 feet
- The deepest lake is Baikal Lake in Siberia, Russia.
- One thousand one hundred forty-eight feet; $1000 + 100 + 40 + 8$ feet

Now work margin exercise 9.

Completion Example Answers

4. a. $30,000 + 2000 + 80 + 1$ b. $400,00 + 90,000 + 7000 + 500$ 6. a. eight thousand four hundred seven b. fifteen thousand, three hundred fifty-two 8. a. 2,800,035 b. 5,350,000

Margin Exercise Answers

1. a. 9 b. 6 c. 1 2. a. hundreds place b. ten thousands place c. tens place 3. a. $400 + 60 + 3$
 b. $7000 + 300$ 4. a. $20,000 + 9000 + 500 + 20 + 4$ b. $800,000 + 8000 + 400 + 90 + 1$ 5. a. thirty-two million, four hundred fifty thousand, ninety b. five thousand eighty-four 6. a. six thousand seven hundred ninety-one b. twenty-three thousand, five hundred seven 7. a. 6041 b. 1,483,007
 8. a. 6,300,500 b. 4,875,000 9. a. Antarctica b. 604 feet c. seven hundred seven feet; $700 + 7$

1.1 Exercises

Concept Check

Fill-in-the-Blank. Complete each sentence using information found in this section.

- Given the number 791,065, the digit ____ is in the thousands place.
- The place value to the left of the millions place is the _____ place.
- Another name for the natural numbers is the _____ numbers.
- The smallest whole number is ____ while the smallest natural number is ____.
- The number 5,012 written in expanded notation would be _____ + _____ + _____ + _____.
- The number 40,782 written in words is _____.

True/False. Determine whether each statement is true or false. If a statement is false, explain how it can be changed so the statement will be true. (**Note:** There may be more than one acceptable change.)

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7. In the number 21,057, the “1” represents 1000.
 8. 56,317 can be written as $56,000 + 300 + 17$ in expanded notation.
 9. 42,360 can be written as forty-two thousand, three hundred sixty.
 10. The word “and” is not used when reading or writing whole numbers.

Practice

1. Given the number 284,065, which digit indicates the number of
 - a. tens?
 - b. ten thousands?
 - c. hundreds?
2. Given the number 13,476,582, which digit indicates the number of
 - a. thousands?
 - b. millions?
 - c. ten millions?
3. For the number 71,349, state the place value of
 - a. the digit 7.
 - b. the digit 3.
 - c. the digit 9.
4. For the number 309,472, state the place value of
 - a. the digit 9.
 - b. the digit 4.
 - c. the digit 7.
5. Name the place value of each nonzero digit in the following number: 24,608.
6. Name the place value of each nonzero digit in the following number: 34,708.
7. Name the place value of each nonzero digit in the following number: 2,403,189,500.
8. Name the place value of each nonzero digit in the following number: 48,569,102,340.

Write each number in expanded notation. See Examples 3 and 4.

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|---------|------------|
| 9. 37 | 13. 1892 |
| 10. 84 | 14. 2059 |
| 11. 563 | 15. 25,658 |
| 12. 821 | 16. 32,341 |

Write each number in words. See Examples 5 and 6.

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- | | |
|------------|----------------|
| 17. 835 | 21. 683,100 |
| 18. 122 | 22. 529,300 |
| 19. 30,201 | 23. 16,302,590 |
| 20. 10,500 | 24. 71,500,000 |

Write each number in standard notation. See Examples 7 and 8.

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|-------------------------------|--------------------------|
| 25. five hundred eighty | 27. two thousand five |
| 26. seven hundred fifty-seven | 28. ten thousand, eleven |

29. three thousand eight hundred thirty-four
30. eight thousand four hundred sixty-five
31. seventy-eight thousand, nine hundred two
32. eighty-six thousand, six hundred ten
33. sixty-three thousand, sixty-five
34. twenty-four thousand, six hundred
35. four hundred thousand, seven hundred thirty-six
36. five hundred thirty-seven thousand, eighty-two
37. eighty-two million, seven hundred thousand
38. one hundred million
39. thirty-five million, nine hundred sixty thousand, thirteen
40. two hundred eighty-one million, three hundred thousand, five hundred one

Applications

Write the numbers in each sentence in words.

41. The largest lake in the United States is Lake Superior. It takes up an area of 82,103 square kilometers.
42. The population of Los Angeles is 3,976,322.
43. The country of Chile averages about 110 miles in width and is about 2650 miles long.
44. One of the world's tallest buildings is the Taipei Financial Center in Taipei, Taiwan. The building has 101 stories and reaches 1761 feet tall.
45. The Republic of Venezuela covers an area of 352,143 square miles, or about 912,050 square kilometers.
46. The Pacific Ocean has an area of approximately 63,800,000 square miles and has an average depth of 14,040 feet.
47. In 2021, the student enrollment at College of Charleston was 10,667 and the student enrollment at the University of Minnesota was 66,496.¹
48. The average distance from the earth to the sun is about 93,000,000 miles, or 149,730,000 kilometers.

Write the numbers in each sentence in standard form.

49. The largest collection of Joker playing cards consists of eight thousand, five hundred twenty cards amassed by Tony De Santis after inheriting a two thousand piece collection from the magician Fernando Riccardi.²
50. The 2022 Tour de France covered three thousand three hundred twenty-eight kilometers. The winner received five hundred thousand euros.
51. The largest playing card structure in the world was completed by Bryan Berg in Macau, China. It took him forty-four days and he used two hundred eighteen thousand, seven hundred ninety-two cards.³

¹ Source: cofc.edu/about/ata glance and idr.umn.edu/reports-by-topic-enrollment/enrollments

² Source: www.guinnessworldrecords.com/records-6000/largest-playing-card-joker-collection

³ Source: www.guinnessworldrecords.com/world-records/largest-playing-card-structure

- 52. Russia is the largest country in the world at seventeen million, ninety-eight thousand, two hundred forty-two square kilometers. It borders fourteen countries.⁴
- 53. Florida, by far, has the highest number of seasonal, recreational, or occasional use homes. Wisconsin and Arizona are in second and third place with one hundred ninety-three thousand, forty-six homes and one hundred eighty-four thousand, three hundred twenty-seven homes, respectively.⁵
- 54. According to the latest census, the state with the most housing units was California with one million, six hundred eighty thousand, eighty-one while the state with the fewest was Wyoming, with two hundred sixty-one thousand, eight hundred sixty-eight.⁶
- 55. Greece has a population of ten million, five hundred thirty-three thousand, eight hundred seventy-one, with approximately three million, one hundred fifty-four thousand of their citizens living in Athens.⁷
- 56. In 2020, Cedar Point in Sandusky, Ohio had one million, twenty thousand visitors. In the same year, the Magic Kingdom at Walt Disney World in Lake Buena Vista, Florida, had six million, nine hundred forty-one thousand visitors.⁸

Solve.

- 57. During a talk show, a guest says that his website has four hundred eighty thousand one hundred five views per day. The transcriptionist writes this number as “408,105”. Is this the correct standard notation? If not, what should it be?
- 58. A jewelry maker made one thousand five hundred dollars during one week. She keeps track of her income and writes “\$1500” in a spreadsheet. Is this the correct standard notation? If not, what should it be?

Use the table to answer the following questions.

PGA Tour Statistics 2021–2022

Rank	Player	Events	Rounds	Cuts Made	Top 10	Wins	Cup Points	Earnings
1	Scottie Scheffler	25	66	21	11	4	3556	\$14,046,910
2	Cameron Smith	18	49	15	7	3	2335	\$10,107,897
3	Will Zalatoris	24	57	19	9	1	1680	\$9,405,082
4	Patrick Cantlay	20	52	18	12	2	2108	\$9,369,605
5	Rory McIlroy	16	52	14	10	3	2104	\$8,654,566
6	Xander Schauffele	21	57	19	7	3	2153	\$7,427,299
7	Sam Burns	24	69	18	8	3	2275	\$7,073,986
8	Matt Fitzpatrick	20	48	17	10	1	1596	\$7,012,672
9	Justin Thomas	21	61	19	10	1	1783	\$6,829,576
10	Cameron Young	25	70	18	7	0	1774	\$6,520,598

Source: Golf Stat and Records, PGA Tour, Accessed August 29, 2022, www.pgatour.com/stats.html.

- 59. Which player played 69 tournament rounds during the 2021–2022 season?

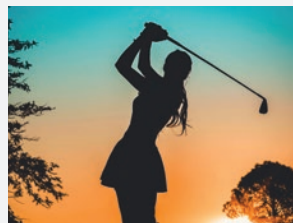
4 Source: www.cia.gov/library/publications/the-world-factbook

5 Source: www.census.gov

6 Source: www.census.gov

7 Source: www.cia.gov/the-world-factbook/countries/greece

8 Source: aecom.com/theme-index



What about the Women?

The 2022 leading earners on the Ladies Professional Golf Association tour, as shown on the LPGA’s official website, were Minjee Lee of Australia with \$3,736,526, followed by South Korea’s In Gee Chun with \$2,603,128 and Canada’s Brooke M. Henderson with \$2,218,426. The highest career earner in the LPGA is Sweden’s Annika Sorenstam with \$22,583,603.

Source: LPGA, www.lpga.com

60. Which player won more money than Cameron Smith during the 2021-2022 season? Write the amount that he won in words and in expanded notation.
61. Which player had 9 top ten finishes?
62. How many cup points did Rory McIlroy win? Write this number of points in words.
63. Write the earnings of Matt Fitzpatrick in words.

Use the table to answer the following questions.

Top Attended Broadway Shows
for the Week Ending March 27, 2022

Broadway Show	Attendance	Gross
<i>The Music Man</i>	12,092	\$3,451,724
<i>Hamilton</i>	10,559	\$2,272,219
<i>Wicked</i>	14,640	\$1,944,704
<i>The Lion King</i>	13,208	\$1,778,641
<i>Plaza Suite</i>	7791	\$1,657,090
<i>Harry Potter and the Cursed Child</i>	11,191	\$1,704,152
<i>Moulin Rouge! The Musical</i>	9908	\$1,381,323
<i>MJ The Musical</i>	9754	\$1,314,241
<i>Six</i>	8150	\$1,284,951

Source: Broadway World, www.broadwayworld.com/grosses.cfm

64. Which of these shows had the smallest gross income?
65. Which show had the largest attendance?
66. Write the largest gross income number in words.
67. Which show had the smallest attendance? Write this number in words.
68. Two shows had gross income of over two million dollars. Which shows were they?
69. Four shows had attendance of fewer than 10,000 people. Which shows were they?
70. Which show had the smaller gross income: *MJ The Musical* or *Six*?
71. Which show had higher attendance: *Hamilton* or *Wicked*?



Hottest Tickets

The longest-running show on Broadway of all time is Andrew Lloyd Webber's musical *The Phantom of the Opera*, which opened on January 26, 1988, and is still running at the Majestic Theatre on Broadway. Across the Atlantic, on London's West End, the longest running show is the murder mystery play *The Mousetrap*, which opened in 1952 and is still running.

Use the table to answer the following questions.

Top 10 Domestic Gross for Movies Opening in 2021				
Rank	Movie Title	Studio	Opening	Total Gross
1	<i>Spider-Man: No Way Home</i>	Sony	\$260,138,569	\$804,416,709
2	<i>Shang-Chi and the Legend of the Ten Rings</i>	WDSMP	\$75,388,688	\$224,543,292
3	<i>Venom: Let There Be Carnage</i>	Sony	\$90,033,210	\$213,550,366
4	<i>Black Widow</i>	WDSMP	\$80,366,312	\$183,651,655
5	<i>F9: The Fast Saga</i>	Universal	\$70,043,165	\$173,005,945
6	<i>Eternals</i>	WDSMP	\$71,297,219	\$164,870,234
7	<i>Sing 2</i>	Universal	\$22,326,230	\$162,700,840
8	<i>No Time to Die</i>	MGM	\$55,225,007	\$160,891,007
9	<i>A Quiet Place Part II</i>	Paramount	\$47,547,231	\$169,072,261
10	<i>Ghostbusters: Afterlife</i>	Sony	\$44,008,406	\$129,360,575

Source: Information courtesy of Box Office Mojo. Used with permission. www.boxofficemojo.com

72. For *Eternals*, write the total domestic gross income in words.
73. Write the opening domestic income for *A Quiet Place Part II* in expanded notation.
74. Which movie had the largest gross domestic income in 2021?
75. Write the total domestic gross income for *Black Widow* in standard form and in words.

Writing & Thinking

76. How are natural numbers and whole numbers different and how are they the same?
77. A googol is the name of a very large power of ten. Look up the meaning of this term on the internet. (**Note:** Ten to the power of a googol is called a googolplex.)
78. According to the 2020 Census, Pennsylvania is the fifth most populous state in the United States with 13,002,700 people. Name the place value of each nonzero digit in this number. Use the internet to find the populations of the four most populous states.⁹
79. When are hyphens used to write numbers in English words?

9 Source: www.census.gov/data/tables/2020/dec/2020-apportionment-data.html