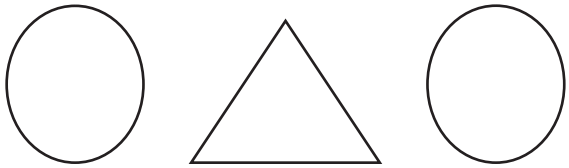
NAME CLASS DATE

Course 3 Unit 1 Practice

LESSON 1-1

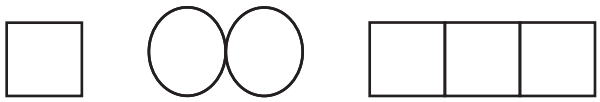
1. Analyze the sequence below.



a. Draw the next figure in the sequence.

b. Write a conjecture for the pattern of the sequence.

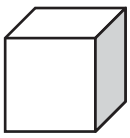
2. What is the sixth term in this sequence?



3. Construct viable arguments. Analyze the sequence below.

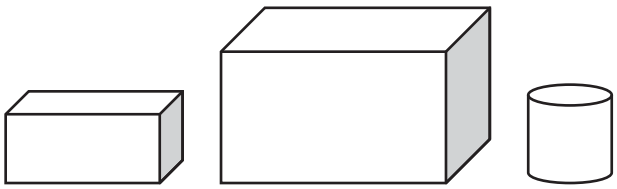
Aaron says that the next figure in this sequence is

Zelly says that the next figure in this sequence is

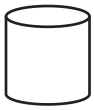


Who is correct? Explain.

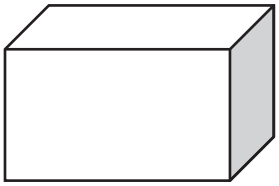
4. Which is the next figure in this sequence?



A.



B.



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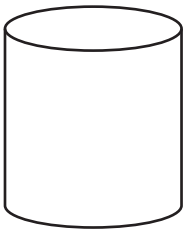
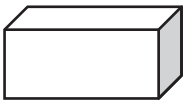


D.



5. Look for and make use of structure. Use the drawing tool to create your own sequence. Then describe the sequence.

NAME CLASS DATE

LESSON 1-2

6. Analyze the sequence below.

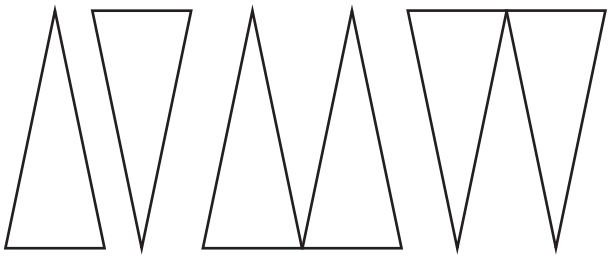


Figure 1 **Figure 2** **Figure 3** **Figure 4**

a. Draw the next figure in the sequence.

b. Write a conjecture for the pattern of the sequence.

c. Critique the reasoning of others. India predicts that the 9th figure in the sequence will look like this.

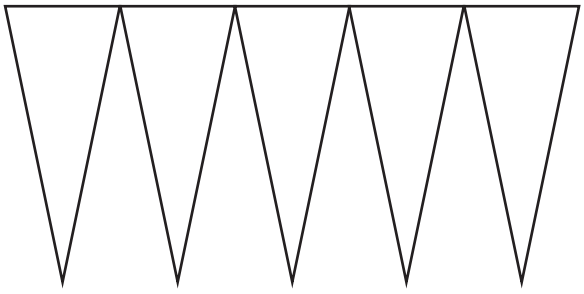


Figure 9

Did India draw the 9th figure correctly? Explain your reasoning.

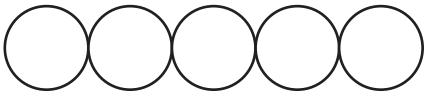
7. Which is the next figure in the sequence below?

Figure 1 **Figure 2** **Figure 3** **Figure 4**

A.

B.

C.



D.

8. Analyze the sequence below.

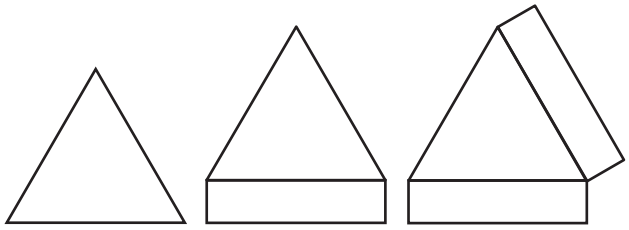


Figure 1 **Figure 2** **Figure 3**

a. Draw the next figure in this sequence.

b. Look for and make use of structure. How would you continue the sequence above? Draw Figure 5 of your sequence.

9. Assume that the number of quadrilaterals continue to increase in the sequence for Item 8. Organize the information about the sequence in the table below.

Figure	Number of Triangles	Number of Quadrilaterals	Sum
1	1	0	1
2	1	1	
3			
4			
5			
6			
7			

10. Analyze the sequence below.

Figure 1 Figure 2

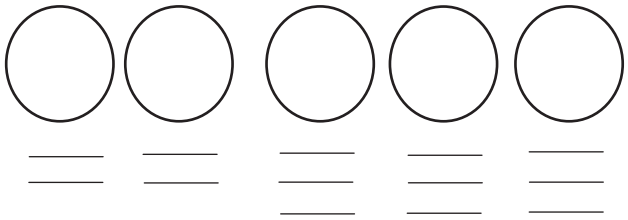


Figure 3 Figure 4

a. Organize the information about the sequence in the table below.

Figure	Number of Circles	Number of Line segments	Sum
1	1	0	1
2	1	1	
3	2		
4	3		
5	4		
6	5		
7	6		

b. Reason quantitatively. Write a conjecture on how you would determine the number of circles and the number of line segments in any figure in the sequence.

c. What is the sum of the geometric figures in Figure 21? Explain.

LESSON 1-3

11. Express regularity in repeated reasoning. Examine the following sequences and state whether they are increasing or decreasing. Support your answer by describing the pattern.

a. $\frac{1}{2}, \frac{2}{3}, \frac{3}{4}, \ldots$

b. $\frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \ldots$

c. 1, 1.1, 1.11, . . .

12. a. Arrange the expressions below so they form a decreasing sequence when simplified.

-5×3 $\quad -18 + (-2)$

$-37 - (-32)$ $\quad -200 \div 20$

b. Describe the pattern in the sequence.

13. Describe the pattern in each sequence. Then write the next three terms.

a. A, Z, B, Y, . . .

b. $\frac{1}{3}, \frac{2}{33}, \frac{3}{333}, \ldots$

c. $-1, 1, 3, -3, \ldots$

14. Which of the following is the most complete description of the sequence below?

1, 1.2, 12.3, 123.4, . . .

A. The sequence is increasing.

B. The decimal point moves to the right in each term.

C. A digit that increases by 1 is added to the right of the number in each term.

D. A digit that increases by 1 is added to the right of the number in each term and the decimal point moves one position to the right.

15. Make sense of problems. Annika wrote a sequence and gave it the following description: "The sequence is neither increasing nor decreasing. You add 2 to the odd terms and subtract 5 from the even terms." Write five terms from a sequence that could be the one Annika described.

LESSON 2-1

16. Copy and complete.

a. $\frac{1}{2} + \frac{3}{4} = \frac{\square}{4} + \frac{3}{4}$

b. $\frac{2}{3} + \frac{5}{6} = \frac{\square}{6} + \frac{5}{6}$

c. $\frac{3}{3} - \frac{2}{3} = \frac{\square}{12} - \frac{\square}{12}$

17. Simplify each expression.

a. $\frac{1}{3} + \frac{5}{9}$

b. $\frac{3}{4} + \frac{7}{8}$

c. $\frac{4}{5} - \frac{3}{10}$

d. $\frac{2}{3} - \frac{1}{4}$

e. $\frac{5}{6} - \frac{5}{8}$

f. $1\frac{1}{2} - \frac{3}{4}$

g. $13\frac{2}{5} + 6\frac{3}{5}$

h. $10 - 8\frac{4}{9}$

i. $15\frac{3}{4} + 12\frac{5}{8}$

j. $32\frac{1}{6} - 14\frac{3}{8}$

18. Juliana had $15\frac{1}{2}$ inches of green ribbon for an art project. She cut off one piece of ribbon that was $2\frac{3}{4}$ inches long and another piece that was $6\frac{2}{3}$ inches long. How many inches of ribbon did she have left?

19. Reason Quantitatively. 3 cups of trail mix is about 1 pound. Brian mixed $1\frac{1}{4}$ cups of granola, $1\frac{1}{3}$ cups of raisins, and $\frac{3}{4}$ cups of peanuts to make trail mix. Without calculating determine if Brian's trail mix is greater than, equal to, or less than a pound. Explain.

20. Make sense of problems. Maureen has a rectangular vegetable garden. It is $9\frac{3}{4}$ feet wide and $12\frac{1}{2}$ feet long. She wants to put a fence around her garden. The fencing will be interrupted by one gate that is 48 inches wide. How much fencing does she need to fence in the garden?

A. $13\frac{1}{4}$ ft

B. $40\frac{1}{2}$ ft

C. $34\frac{1}{2}$ ft

D. $38\frac{1}{2}$ ft

LESSON 2-2

21. Simplify each expression.

a. $\frac{5}{9} \cdot \frac{3}{10}$

b. $2\frac{7}{9} \cdot 1\frac{3}{5}$

c. $30 \cdot 1\frac{3}{10}$

d. $16 \div \frac{4}{9}$

e. $4\frac{4}{5} \div 3\frac{3}{4}$

f. $5\frac{1}{7} \cdot 1\frac{2}{9}$

g. $7\frac{1}{7} \div 1\frac{1}{4}$

h. $8\frac{2}{5} \div 3\frac{3}{10}$

i. $15\frac{3}{4} \cdot 2\frac{2}{3}$

j. $3\frac{3}{8} \div 9$

22. Reason quantitatively. Without calculating, determine if the product or quotient is less than, equal to, or greater than 1.

a. $1 \cdot \frac{2}{3}$

b. $1 \div \frac{2}{3}$

c. $\frac{2}{3} \div \frac{3}{2}$

d. $1\frac{4}{7} \div 1\frac{4}{7}$

e. $1\frac{1}{2} \cdot 1\frac{1}{2}$

23. Persevere in solving problems. Mr. Takeuchi wants to fence in an area that is $17\frac{1}{2}$ feet long by $10\frac{1}{2}$ feet wide. The local hardware store is selling a package of 4 panels of fencing for $76.92. Each panel is 42 inches wide and 48 inches tall.
Mr. Takeuchi also wants to put in a gate along the length of the garden. The gate is $3\frac{1}{2}$ feet wide and 48 inches tall and costs $129. How much will it cost to fence in the area? Explain.

24. Dawn made $4\frac{3}{4}$ pounds of trail mix. She wants to divide the mix into small bags that each hold $\frac{1}{3}$ pound of mix. How many bags can she fill?

A. 2

B. 5

C. 8

D. 14

25. Tenzin wants to build a book case. He will have 3 shelves and the top of the bookcase on which to put his books. His books are about 10 inches high. Each shelf, including the top, is $\frac{3}{4}$ inch thick. At least how tall will the book case be? Write your answer in feet and inches.

LESSON 3-1

26. Simplify each expression.

a. 15^2

b. 0.2^2

c. $\left(\frac{3}{4}\right)^2$

d. $\sqrt{625}$

e. $\sqrt{81}$

27. Solve each equation.

a. $x^2 = 900$

b. $x^2 = 1.21$

c. $x^2 = 196$

d. $x^2 = \frac{1}{64}$

e. $x^2 = \frac{9}{25}$

28. Which of the following is NOT a perfect square?

A. 169

B. 0.16

C. 0.9

D. $\frac{49}{100}$

29. Critique the reasoning of others. Lucas has 36 feet of fencing. He wants to fence in an area that is a perfect square. He says the side of this square will be 6 feet. Is Lucas correct? Explain

30. Maya spent $192 to carpet a square area. The carpet cost $3 a square foot. How would you calculate the length of the area?

LESSON 3-2

31. Simplify each expression.

a. 8^3

b. $\sqrt[3]{8}$

c. $\left(\frac{1}{3}\right)^3$

d. $\sqrt[3]{64}$

e. $\sqrt[3]{0.001}$

32. Solve each equation.

a. $x^3 = 27$

b. $x^3 = 125$

c. $x^3 = 8$

d. $x^3 = 1000$

e. $x^3 = 8000$

33. Which of the following is NOT a perfect cube?

A. 8

B. 64

C. 625

D. 1,000

34. Make sense of problems. An 80-pound bag of concrete mix will yield 0.6 cubic feet of concrete. Each bag costs $4.98. An artist wants to make a concrete sculpture consisting of three cubes, one on top of the other. The cube at the base will be 3 ft × 3 ft × 3 ft. The next cube will be 2 ft × 2 ft × 2 ft. The third cube will be 1 ft × 1 ft × 1 ft. How much will the materials for the sculpture cost?

35. A cube has a volume of 125 cubic centimeters. What is the length of an edge of this cube?

LESSON 3-3

36. Evaluate the following expressions.

a. $2^5 \div 4^3$

b. $3^4 + 6^3$

c. $\sqrt[3]{10^2 + 5^2}$

d. $\left(\frac{1}{2}\right)^5 + \frac{3^2}{2^4}$

e. $10^4 + 6 \times 5 - 6^3 \div (3 + 5)$

37. Use $<$, $=$, or $>$ to complete the following.

a. 5^3 _____ 11^2

b. 2^6 _____ 4^3

c. $\sqrt[3]{64}$ _____ $\sqrt{49}$

d. $3^5 \div 9$ _____ 3^3

e. 7^3 _____ 15^2

38. Which of the following is not the same amount?

A. 2^6

B. 3^4

C. 4^3

D. 8^2

39. Look at the expression below.

$$\left(\sqrt[3]{216} + 2^2\right)^3 - 3^4 \times 5$$

a. Write the steps needed to evaluate the expression.

b. Evaluate the expression.

40. Complete the table.

2^1	
	4
2^3	
2^4	
	32
2^6	
2^7	
	256
	512
2^{10}	

LESSON 4-1

41. Complete the table. Round decimals to the nearest hundredth.

Fraction	Decimal Form	Percent
	0.3	
$\frac{1}{3}$		
		80%
	0.375	
		75%
$\frac{4}{25}$		
		$12\frac{1}{2}\%$
	0.7	
		50%
$\frac{3}{5}$		

42. Compare. Use $<$, $=$, or $>$.

a. $\frac{1}{5}$ _____ 25%

b. 1.5 _____ 150%

c. 75% _____ $\frac{1}{2}$

d. $\frac{2}{3}$ _____ 0.6

e. $16\frac{2}{3}\%$ _____ $\frac{1}{6}$

43. Which of the following is NOT equivalent to 25%?

A. $\frac{1}{4}$

B. $\frac{2}{5}$

C. 0.25

D. $\frac{3}{12}$

44. Write the steps needed to convert $\frac{8}{25}$ to a percent.

45. Model with mathematics. Draw and shade a circle to model 0.625 as a fraction.

LESSON 4-2

46. Convert the following to decimals.

a. $\frac{9}{11}$

b. $\frac{4}{9}$

c. $\frac{2}{3}$

d. $\frac{7}{11}$

e. $\frac{3}{22}$

47. Convert the following repeating decimals to fractions or mixed numbers.

a. 0.5555 . . .

b. 0.242424 . . .

c. 3.8888 . . .

d. 6.010101 . . .

e. 0.454545 . . .

48. Which of the following is the fractional form of 0.545454 . . .?

A. $\frac{5}{11}$

B. $\frac{5}{9}$

C. $\frac{6}{11}$

D. $\frac{54}{100}$

49. Write an example of a nonterminating, nonrepeating decimal.

50. Look for and make use of structure. What power of 10 would you multiply the decimal 0.456456456 . . . by to find its fractional form? Explain.

LESSON 4-3

51. List the rational number in decreasing order.

a. 16%, $1.\overline{6}$, $1\frac{1}{6}$

b. 0.181818 . . ., 18%, $1\frac{4}{5}$

c. $0.\overline{5}$, $\frac{4}{9}$, $66\frac{2}{3}\%$

d. 0.5454 . . . , $\frac{5}{9}$, 55%

e. 75%, $\frac{2}{3}$, $\frac{8}{11}$

52. Compare. Write $<$, $=$, or $>$.

a. 1.5 _____ 15%

b. 0.5 _____ 0.50

c. $12\frac{1}{2}\%$ _____ $\frac{3}{8}$

d. $\frac{4}{5}$ _____ 40%

e. $3\frac{1}{2}\%$ _____ 0.035

53. Which number is not greater than 0.6?

A. $\frac{2}{3}$

B. $\frac{6}{10}$

C. 0.6666 . . .

D. 0.67

54. Write a number that is $\frac{5}{8}$ greater than each of the following rational numbers.

a. $\frac{1}{4}$

b. 0.8

c. 75%

d. 1.375

e. $\frac{1}{2}$

55. Look for and make use of structure. Is 20% equivalent to $\frac{2}{5}$? Explain.

LESSON 5-1

56. Name the irrational number in each set.

a. $\left\{\sqrt[3]{27}, \sqrt{27}, 1\frac{3}{4}\right\}$

b. $\left\{0.112123\ldots, \frac{3}{11}, \sqrt{25}\right\}$

c. $\left\{\sqrt[3]{125}, 0.444\ldots, \sqrt[3]{12}\right\}$

d. $\left\{\sqrt{121}, \sqrt[3]{64}, \sqrt{8}\right\}$

e. $\left\{0.6363\ldots, \sqrt{48}, \sqrt[3]{8}\right\}$

57. Estimate the following square or cube roots to the tenth place without using a calculator.

a. $\sqrt{13}$

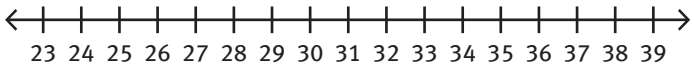
b. $\sqrt[3]{10}$

c. $\sqrt{124}$

d. $\sqrt[3]{50}$

e. $\sqrt{72}$

58. Model with mathematics. Place the approximate value of $\sqrt{32}$ on the number line below.



59. Which of the following roots would be between 8 and 7?

A. $\sqrt{28}$

B. $\sqrt{52}$

C. $\sqrt{35}$

D. $\sqrt{17}$

60. Attend to precision. Mimi says that the $\sqrt[3]{16}$ is 4. Is Mimi correct? Explain.

LESSON 5-2

61. Order the following numbers from least to greatest. $\sqrt{12}$, 4, 3.4, $\sqrt[8]{3}$

62. Compare. Use $<$, $=$, or $>$.

a. $\sqrt[3]{27}$ ____ 3

b. 5 ____ $\sqrt{27}$

c. $\sqrt{16}$ ____ $\sqrt[3]{64}$

d. $\sqrt{19}$ ____ $\sqrt[3]{19}$

e. $\sqrt[3]{126}$ ____ $\sqrt{216}$

63. Determine a rational and an irrational number between 6.2 and 6.3.

64. Which of the following square roots would NOT be between 7 and 8?

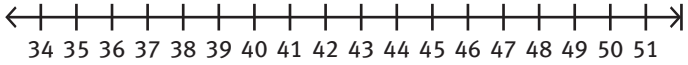
A. $\sqrt{51}$

B. $\sqrt{56}$

C. $\sqrt{63}$

D. $\sqrt{65}$

65. Model with mathematics. Mark the approximate value of $\sqrt{48}$ on the number line below.



LESSON 6-1

66. Simplify each expression.

a. $4^3 \cdot 4^6$

b. $\frac{11^{12}}{11^8}$

c. $n^6 \cdot n^9$

d. $\frac{x^{10}}{x^2}$

e. $a^5 \cdot a^2 \div a^3$

67. Which of the following statements is the rule for multiplying exponential expressions?

A. To multiply exponential expressions with the same base, add the exponents.

B. To multiply exponential expressions with the same base, multiply the exponents.

C. To multiply exponential expressions with the same base, multiply the bases and add the exponents.

D. To multiply exponential expressions with the same base, add the bases and add the exponents.

68. Critique the reasoning of others. Adam multiplied $5^{15} \cdot 5^3$ and got 5^5. Do you agree with Adam? Explain.

69. Compare. Use $<$, $=$, or $>$.

a. $13^5 \cdot 13^6$ ____ $13^6 \cdot 13^5$

b. $12^4 \cdot 12^3$ ____ $12^4 \cdot 11^3$

c. $5^{12} \div 5^4$ ____ $5^7 \cdot 5^3$

d. $8^{10} \cdot 8^5$ ____ $8^7 \cdot 8^3 \cdot 8^5$

e. $a^9 \div a^6 \cdot a^2$ ____ $a^9 \cdot a^6 \div a^2$

70. Evaluate each exponential expression.

a. $\frac{10^6}{10^2} \div 10^4$

b. $6^7 \div 6^5 \cdot 6$

c. $12^4 \div 12^2 \div 3$

d. $8^3 \cdot 2^3 \div 8^3$

e. $\frac{3^4 \cdot 5^3}{3^3 \cdot 5}$

LESSON 6-2

71. Rewrite each expression without a negative exponent.

a. 5^{-4}

b. x^{-1}

c. $\frac{a^{-2}}{4}$

d. $\frac{1}{2^{-3}}$

e. $\frac{5}{7y^{-2}}$

72. Simplify each expression. Write your answer in exponential form without negative exponents.

a. $\frac{m^3}{m^{-2}}$

b. $\frac{8^5}{8^{12}}$

c. $\frac{n^{-2}}{n^3}$

d. $\frac{6bc^6}{9b^{-2}c^3}$

e. $\frac{5xy^{-1}}{x^{-2}y^5}$

73. Which of the following is $\frac{3c^{-2}d^3}{15c^3d^5}$ in simplest form?

A. $5c^5 d^8$

B. $\frac{1}{5c^5d^8}$

C. $5cd^2$

D. $\frac{1}{5c^5d^2}$

74. Reason abstractly. For what value of x is $2^5 \cdot 2^x = 2$?

75. Simplify $\frac{1}{2^{-2}} \div 2^{-2}$.

LESSON 6-3

76. Simplify each expression.

a. $(7^2)^3$

b. $(12^{-1})^{-3}$

c. $(a^5)^{-2}$

d. $x^{-4} \cdot x^6$

e. $3^3 \cdot 3^{-4}$

77. Evaluate each expression.

a. $1{,}000{,}000^0$

b. $(100^2)^{-1}$

c. $(2^{-3})^{-2}$

d. $5^6 \div 5^8$

e. $3^3 \cdot 3^{-4}$

78. Compare. Use $<$, $=$, or $>$.

a. $9^2 \cdot 9^3$ _____ $(9^2)^3$

b. 4^{-3} _____ 125^0

c. $(5^{-2})^3$ _____ $(5^2)^{-3}$

d. $(8^{100})^0$ _____ 8^{-1}

e. $12 \cdot 12^0$ _____ $(12^2)^0$

79. Critique the reasoning of others. Paris simplified the expression $10^3 \cdot 10^{-1}$ as 10^{-3}. Was Paris correct? Explain.

80. Which of the following is $(7^{-a})^b$?

A. 7^{-a+b}

B. 7^{-ab}

C. 7^{a+b}

D. 7^{ab}

LESSON 7-1

81. Find the value of each expression.

a. 27×10^5

b. 1.9×10^3

c. 520×10^4

d. 0.35×10^6

e. 9.8×10^4

82. Convert each number from scientific notation to standard form.

a. 8.3×10^{10}

b. 4.76×10^7

c. 6.135×10^9

d. 7.3×10^8

e. 5.89×10^{11}

83. Convert each number from standard form to scientific notation.

a. 315,000,000

b. 12,000,000

c. 765,000

d. 480,000,000,000

e. 6250

84. Which of the following is 8.25×10^5?

A. 8,250

B. 82,500

C. 825,000

D. 825,000,000

85. Use appropriate tools strategically. How would you use scientific notation to calculate very large numbers when an estimate is sufficient?

LESSON 7-2

86. Convert each number from standard form to scientific notation.

a. 0.0058

b. 0.0000139

c. 0.749

d. 4.2

e. 0.000000008

87. Convert each number from scientific notation to standard form.

a. 3×10^{-7}

b. 8.105×10^{-5}

c. 6.53×10^{-1}

d. 4.3×10^{-3}

e. 7.2×10^{-6}

88. Order these numbers from greatest to least.

7.8×10^{-2}, 0.0078, 2.3×10^{-1}*f*

89. Which of the following is 0.000000368 in scientific notation?

A. 3.68×10^{-6}

B. 36.8×10^{-6}

C. 3.68×10^{-7}

D. 3.68×10^{-9}

90. Reason Quantitatively. When a number is written in scientific notation, how do you know if the number is large or small?

LESSON 8-1

91. Simplify each expression and write your answers in scientific notation.

a. $(2.5 \times 10^6)(4 \times 10^3)$

b. $(3 \times 10^4)(6 \times 10^2)$

c. $(5 \times 10^9)(8 \times 10^6)$

d. $\dfrac{5.6 \times 10^{12}}{8 \times 10^5}$

e. $\dfrac{3.8 \times 10^3}{4 \times 10^8}$

f. $\dfrac{1.74 \times 10^9}{4 \times 10^4}$

g. $(9.5 \times 10^{-3})(1.24 \times 10^{11})$

h. $\dfrac{8.2 \times 10^7}{4.1 \times 10^{16}}$

i. $(7.2 \times 10^{-8})(2.5 \times 10^5)$

j. $\dfrac{9.6 \times 10^2}{5 \times 10^{-3}}$

92. Use your calculator to simplify each expression. Then, write each output as shown on your calculator and in scientific notation.

a. $(5.2 \times 10^5)(3.6 \times 10^7)$

b. $\dfrac{3.135 \times 10^8}{8.25 \times 10^{15}}$

c. $\dfrac{1.83825 \times 10^4}{7.125 \times 10^6}$

d. $\dfrac{6.125 \times 10^5}{1.225 \times 10^6}$

e. $(8.976 \times 10^{21})(5.63 \times 10^{13})$

93. Reason quantitatively. Use scientific notation to multiply (785)(34,000,000,000). Explain the steps.

94. The wavelength of cadmium's green line is 0.0000509 centimeters. Which of the following is this number in scientific notation?

A. 5.09×10^{-7}

B. 5.09×10^{-5}

C. 5.09×10^7

D. 5.09×10^5

95. Use appropriate tools strategically. How can you find the quotient of (3.6×10^6) and (3×10^{15}).

LESSON 8-2

96. Add or subtract.

a. $6.2 \times 10^8 + 5.8 \times 10^8$

b. $7.9 \times 10^5 - 1.4 \times 10^5$

c. $3 \times 10^{-12} - 1.5 \times 10^{-12}$

d. $2.3 \times 10^{-9} + 8.7 \times 10^{-9}$

e. $4.5 \times 10^{15} + 9 \times 10^{15} + 7.6 \times 10^{15}$

f. $3.4 \times 10^5 + 7 \times 10^6$

g. $2.7 \times 10^{-3} - 1.6 \times 10^{-4}$

h. $6.5 \times 10^9 - 3.9 \times 10^8$

i. $7.2 \times 10^7 + 5.8 \times 10^6$

j. $9.3 \times 10^{-5} + 8.8 \times 10^{-4}$

97. The table below shows the distances between Earth and each of the planets.

a. Complete the table.

Planet	Minimum Distance from Earth to each Planet	
	In Standard Form	In Scientific Notation
Mercury	48,000,000 miles	
Venus	25 million miles	
Mars		3.5×10^7
Jupiter	365,000,000	
Saturn		7.46×10^8
Uranus	1.6 billion miles	
Neptune		2.68×10^9

b. How much further from the Earth is Saturn than Mars? Write your answer in scientific notation.

c. **Reason quantitatively.** Explain how you would find how much further Neptune is from Earth than is Mars using scientific notation.

98. The table below shows the sizes of some very small objects. The measurements are in nanometers. A nanometer is one billionth of a meter.
1 nanometer (nm) $= 1 \times 10^{-9}$ meter (m)

a. Complete the table.

Object	Size of object		
	In nanometers	In meters	
		In Standard Form	In Scientific Notation
Diameter of a hydrogen atom	0.1 nm		1×10^{-10}
Amino Acid	0.8 nm	0.0000000008	
Small virus	30 nm		3×10^{-8}
Large virus	120 nm		

b. **Reason quantitatively.** How much bigger is the large virus than the small virus? Write your answer in nanometers, and in meters in standard form and in scientific notation. To calculate differences between very small objects, which unit of measure is easier to use nanometers or meters?

99. **Make sense of problems.** The width of a human red blood cell is 9 micrometers (μm).
$1\ \mu m = 1 \times 10^{-6}$ m. Which of the following measures shows the standard form of the width of the blood cell in meters?

A. 0.0009 m

B. 0.000009 m

C. 9×10^{-6} m

D. 9×10^{-5} m

100. The diameter of an ostrich egg is 120 mm. Determine the length in meters. Then write the answer in scientific notation.