

LESSON

3

Exponents and Roots**Practice B: Scientific Notation**

Write each number in standard notation.

1. 2.54×10^2

2. 6.7×10^{-2}

3. 1.14×10^3

4. 3.8×10^{-1}

5. 7.53×10^{-3}

6. 5.6×10^4

7. 9.1×10^5

8. 6.08×10^{-4}

9. 8.59×10^5

10. 3.331×10^6

11. 7.21×10^{-3}

12. 5.88×10^{-4}

Write each number in scientific notation.

13. 75,000,000

14. 208

15. 907,100

16. 56

17. 0.093

18. 0.00006

19. 0.00852

20. 0.0505

21. 0.003007

22. 5226

23. 0.04

24. 98,856

25. Jupiter is about 778,120,000 kilometers from the Sun. Write this number in scientific notation.

26. The *E. coli* bacterium is about 5×10^{-7} meters wide. A hair is about 1.7×10^{-5} meters wide. Which is wider, the bacterium or the hair?

Problem Solving

- | | |
|-------------------------|-----------------------------|
| 1. 2^{12} fruit flies | 2. 8^{11} bacteria |
| 3. 13 hr | 4. 3^{12} cm ³ |
| 5. D | 6. F |
| 7. D | 8. H |

Reading Strategies

- | | |
|--|----------|
| 1. 3 | 2. 3 |
| 3. yes | |
| 4. $(3 \cdot 3) \cdot (3 \cdot 3 \cdot 3 \cdot 3)$ | |
| 5. 3^6 | 6. yes |
| 7. yes | 8. 5^3 |

Puzzles, Twisters & Teasers

E	G	R	O	U	P	O	W	E	R	A	C
V	X	E	R	T	Y	Z	F	G	H	J	O
A	Y	P	R	O	P	E	R	T	Y	A	M
L	W	E	O	C	V	R	V	B	N	P	B
U	U	I	O	N	P	O	O	L	P	P	I
A	D	F	G	B	E	L	L	Y	I	L	N
T	B	A	S	E	S	N	M	J	A	Y	E
E	P	L	M	F	A	C	T	O	R	Q	E
B	E	L	L	Y							

Answers for Lesson 3**Practice A**

- | | |
|---------------------------|----------------------------|
| 1. 0.176 | 2. 8,900 |
| 3. 0.062 | 4. 101 |
| 5. 58,000 | 6. 810,000 |
| 7. 0.00038 | 8. 0.00203 |
| 9. 5000 | 10. 312,000 |
| 11. 0.076 | 12. 0.0000854 |
| 13. 3.76×10^5 | 14. 9.58×10^6 |
| 15. 6.5×10^2 | 16. 1.006×10^3 |
| 17. 2.9×10^1 | 18. 6.1×10^{-3} |
| 19. 1.07×10^{-2} | 20. 2.008×10^{-4} |
| 21. 5.3×10^{-4} | 22. 2.508×10^5 |
| 23. 9.4×10^{-5} | 24. 8.6×10^{-4} |
| 25. 9.3×10^7 | 26. Earth |

Practice B

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|----------------------------|---------------------------|
| 1. 254 | 2. 0.067 |
| 3. 1140 | 4. 0.38 |
| 5. 0.00753 | 6. 56,000 |
| 7. 910,000 | 8. 0.000608 |
| 9. 859,000 | 10. 3,331,000 |
| 11. 0.00721 | 12. 0.000588 |
| 13. 7.5×10^7 | 14. 2.08×10^2 |
| 15. 9.071×10^5 | 16. 5.6×10^1 |
| 17. 9.3×10^{-2} | 18. 6.0×10^{-5} |
| 19. 8.52×10^{-3} | 20. 5.05×10^{-2} |
| 21. 3.007×10^{-3} | 22. 5.226×10^3 |
| 23. 4.0×10^{-2} | 24. 9.8856×10^4 |
| 25. 7.7812×10^8 | 26. the hair |

Practice C

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|--|------------------------------|
| 1. 634,000 | 2. 0.000071 |
| 3. 4,230,000 | 4. 0.0000008235 |
| 5. 0.000000060089 | 6. 5,200,000,000 |
| 7. 2,054,700,000 | 8. 0.0000008394 |
| 9. 968,800,000,000 | 10. 9.7406×10^{10} |
| 11. 6.7×10^{-11} | 12. 5.28×10^9 |
| 13. 8.4×10^{-8} | 14. 6.521×10^{11} |
| 15. 7.254×10^{-10} | 16. 2.0509×10^{13} |
| 17. 6.6×10^{-14} | 18. 3.05×10^{13} |
| 19. 2.6×10^{11} mi ³ | 20. 3.3×10^{-9} sec |
| 21. 1.8×10^{-4} | |

Review for Mastery

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|------------------------|--------------------------|
| 1. positive; | 2. negative; |
| right 6; | left 5; |
| 4,120,000 | 0.000034 |
| 3. 800,000 | 4. 0.00071 |
| 5. 314,000,000 | |
| 6. 3.2; | 7. 7.12; |
| right 7; | left 8; |
| 3.2×10^7 | 7.12×10^{-8} |
| 8. 4.1×10^7 | 9. 6.43×10^{-8} |
| 10. 1.37×10^9 | |