

GUIDED PRACTICE

1. **Vocabulary** Explain how you can tell whether a number is written in *scientific notation*.

SEE EXAMPLE 1 Find the value of each power of 10.

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2. 10^6

3. 10^{-5}

4. 10^{-4}

5. 10^8

SEE EXAMPLE 2 Write each number as a power of 10.

p. 453

6. 10,000

7. 0.000001

8. 100,000,000,000,000,000

SEE EXAMPLE 3 Find the value of each expression.

p. 453

9. 650.3×10^6

10. 48.3×10^{-4}

11. 92×10^{-3}

SEE EXAMPLE 4 12. **Astronomy** A light-year is the distance that light travels in a year and is equivalent to 9.461×10^{12} km. Write this distance in standard form.

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SEE EXAMPLE 5 13. Order the list of numbers from least to greatest.

p. 454

8.5×10^{-1} , 3.6×10^8 , 5.85×10^{-3} , 2.5×10^{-1} , 8.5×10^8

PRACTICE AND PROBLEM SOLVING

Find the value of each power of 10.

14. 10^3

15. 10^{-9}

16. 10^{-12}

17. 10^{14}

Write each number as a power of 10.

18. 0.01

19. 1,000,000

20. 0.0000000000000001

Find the value of each expression.

21. 9.2×10^4

22. 1.25×10^{-7}

23. 42×10^{-5}

24. 0.05×10^7

25. **Biology** The human body is made of about 1×10^{13} cells. Write this number in standard form.

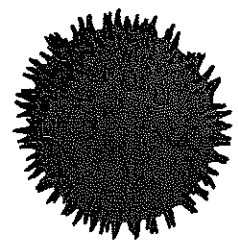
26. **Statistics** At the beginning of the twenty-first century, the population of China was about 1,287,000,000. Write this number in scientific notation.

27. Order the list of numbers from least to greatest.

2.13×10^{-1} , 3.12×10^2 , 1.23×10^{-3} , 2.13×10^1 , 1.32×10^{-3} , 3.12×10^{-3}

28. **Health** Donnell is allergic to pollen. The diameter of a grain of pollen is between 1.2×10^{-5} m and 9×10^{-5} m. Donnell's air conditioner has a filter that removes particles larger than 3×10^{-7} m. Will the filter remove pollen? Explain.

29. **Entertainment** In the United States, a CD is certified platinum if it sells 1,000,000 copies. A CD that has gone 2 times platinum has sold 2,000,000 copies. How many copies has a CD sold if it has gone 27 times platinum? Write your answer in scientific notation.



Grain of pollen, enlarged 1050 times

Write each number in scientific notation.

30. 40,080,000

31. 235,000

32. 170,000,000,000

33. 0.0000006

34. 0.000077

35. 0.0412

Independent Practice

For Exercises	See Example
14-17	1
18-20	2
21-24	3
25-26	4
27	5

Extra Practice

Skills Practice p. S16

Application Practice p. S34