

Example 2
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Write each number in scientific notation.

7. 9,040,000,000 8. 0.02 9. 9.3 million 10. 21,700
11. 0.00325 12. 8,003,000 13. 0.00092 14. 0.0156

Example 3
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Write each number in standard notation.

15. 5×10^2 16. 5×10^{-2} 17. 2.04×10^3 18. 7.2×10^5
19. 8.97×10^{-1} 20. 1.3×10^0 21. 2.74×10^{-5} 22. 4.8×10^{-3}

Examples 4, 5
(pages 401, 402)

Order the numbers in each list from least to greatest.

23. $10^5, 10^{-3}, 10^0, 10^{-1}, 10^1$
24. $9 \times 10^{-7}, 8 \times 10^{-8}, 7 \times 10^{-6}, 6 \times 10^{-10}$
25. $50.1 \times 10^{-3}, 4.8 \times 10^{-1}, 0.52 \times 10^{-3}, 56 \times 10^{-2}$
26. $0.53 \times 10^7, 5300 \times 10^{-1}, 5.3 \times 10^5, 530 \times 10^8$
27. Measuring instruments may have different degrees of precision. Instrument A is precise to 10^{-2} cm, Instrument B is precise to 5×10^{-2} cm, and Instrument C is precise to 8×10^{-3} cm. Order the instruments from most precise (least possible error) to least precise (greatest possible error).

Example 6
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Simplify. Write each answer using scientific notation.

28. $8(7 \times 10^{-3})$ 29. $8(3 \times 10^{14})$ 30. $0.2(3 \times 10^2)$
31. $6(5.3 \times 10^{-4})$ 32. $0.3(8.2 \times 10^{-3})$ 33. $0.5(6.8 \times 10^5)$

B Apply Your Skills

For Exercises 34–39, find the missing value.

Selected Masses (kilograms)

		Standard Notation	Scientific Notation
34.	Elephant		5.4×10^3
35.	Adult human	70	
36.	Dog	10	
37.	Golf ball	0.046	
38.	Paper clip		5×10^{-4}
39.	Oxygen atom	0.000000000000000000000003	

40. **Critical Thinking** Is the number 10^5 in scientific notation? Explain.
41. **Writing** Explain how to write 48 million and 48 millionths in scientific notation.
42. **Health Care** In 2005, the population in the United States will be about 2.87×10^8 . Spending for health care will be about \$5745 per person. About how much will the United States spend on health care in 2005? Use scientific notation.
43. **Computers** A computer can perform 4.66×10^8 instructions per second. How many instructions is that per minute? Per hour? Use scientific notation.
44. **Open-Ended** If you were writing a report about the national debt, would you use scientific notation or standard notation to express the debt amount? Explain why.



World Connection
Elephant calves weigh from 100 to 145 kilograms.