

EXERCISES

Write each number in scientific notation.

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|-----------------|-----------------|-----------------|-----------------|----------------|
| 1. 320 | 2. 342 | 3. 1,000 | 4. 3,000 | 5. 3,580 |
| 6. 9,000 | 7. 10,000 | 8. 32,000 | 9. 76,500 | 10. 50,123 |
| 11. 234,000 | 12. 2,345,000 | 13. 305,000 | 14. 2,220,000 | 15. 324,432 |
| 16. 777,000 | 17. 777,700 | 18. 40,200,000 | 19. 20,220,000 | 20. 19,300,000 |
| 21. 700,000,000 | 22. 712,000,000 | 23. 901,000,000 | 24. 801,500,000 | 25. 40,253,000 |
| 26. 320.45 | 27. 4,582.67 | 28. 56,346.12 | 29. 32,254.123 | 30. 243,142.18 |
| 31. 0.000001 | 32. 0.000123 | 33. 0.0000007 | 34. 0.00000042 | 35. 0.00000436 |
| 36. 0.14258 | 37. 0.05328 | 38. 0.004567 | 39. 0.000368 | 40. 0.283456 |

Write each number in decimal numeral.

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|--------------------------|-----------------------------|---------------------------|----------------------------|---------------------------|
| 41. 1×10^2 | 42. 1.2×10^2 | 43. 2.4×10^3 | 44. 4×10^7 | 45. 4.6×10^5 |
| 46. 4.06×10^7 | 47. 3.52×10^6 | 48. 1.101×10^3 | 49. 4.02×10^8 | 50. 5.0×10^5 |
| 51. 1.48×10^1 | 52. 4.243×10^5 | 53. 9.99×10^5 | 54. 2.345×10^2 | 55. 2.034×10^1 |
| 56. 1×10^{-1} | 57. 1×10^{-2} | 58. 2×10^{-3} | 59. 2.4×10^{-2} | 60. 5×10^{-6} |
| 61. 7.6×10^{-5} | 62. 2.145×10^{-2} | 63. 5.24×10^{-7} | 64. 8.1×10^{-6} | 65. 2.05×10^{-2} |
| 66. 7×10^{-7} | 67. 3.2345×10^{-3} | 68. 8.02×10^{-6} | 69. 1.111×10^{-5} | 70. 1×10^{-9} |

Evaluate each of the following expressions in scientific notation.

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|---|--|---|
| 71. $4 \times 10^5 + 2 \times 10^5$ | 72. $4 \times 10^5 + 2 \times 10^4$ | 73. $4 \times 10^5 - 2 \times 10^5$ |
| 74. $4 \times 10^5 - 2 \times 10^4$ | 75. $4 \times 10^5 \times 2 \times 10^4$ | 76. $4 \times 10^5 \times 2 \times 10^{-4}$ |
| 77. $5 \times 10^6 \times 3 \times 10^5 \times 2 \times 10^4$ | 78. $6 \times 10^4 \times 7 \times 10^8 \times 2 \times 10^{-5}$ | 79. $6 \times 10^4 \times 7 \times 10^{-8}$ |
| 80. $2 \times 10^{-7} \times 4 \times 10^{-6}$ | 81. $2.5 \times 10^9 \times 3 \times 10^6$ | 82. $5.3 \times 10^{10} \times 2.6 \times 10^4$ |
| 83. $\frac{8 \times 10^6}{4 \times 10^2}$ | 84. $\frac{15 \times 10^2}{3 \times 10^7}$ | 85. $\frac{14 \times 10^7}{4 \times 10^2}$ |
86. The distance from the Earth to the Moon is about 399,000,000 meters. Write this number in scientific notation.
87. A light-year is about 5.9×10^{12} miles. Write this number in decimal numeral.
88. The speed of light is about 982,000,000 feet per second. Write this number in scientific notation.
89. The diameter of the solar system is about 118,000,000,000 miles. Write this number in scientific notation.
90. A light-year is about 5.9×10^{12} miles. The nearest star to the Earth, Alpha Centauri, is 4.25 light-years away. Find the distance from the Earth to Alpha Centauri.
91. The size of the universe is estimated 2 million light-years in diameter. A light-year is about 5.9×10^{12} miles. What is the diameter of the universe?