

These problems are intended to *supplement* the problems in the textbook, not *replace* them.

Questions

Change the following numbers to scientific notation (without rounding):

- | | | |
|--------------|---------------------------------------|-------------|
| 1. 66,793 | 5. 97,000 (use 2 significant figures) | 8. 2,123.46 |
| 2. 543.621 | 6. 0.00004300 | 9. 314 |
| 3. 0.00643 | 7. 0.6 | 10. 0.0456 |
| 4. 889,674.0 | | |

How many significant figures does each of the following measurements have?

- | | | |
|------------------------------|------------------------|--------------------------------|
| 11. 36.2 cm | 16. 8.0 ns | 21. 3.13×10^{-4} lbs. |
| 12. 0.0041 mL | 17. 1,762,493 atoms | 22. 600 inches |
| 13. 175 kg | 18. 0.1176 g/mL | 23. -17.66 °C |
| 14. 2642 cars | 19. $6.04 \mu\text{m}$ | 24. 0.000089 m^3 |
| 15. 4.62×10^4 miles | 20. 970.0 yards | 25. 1.20 m/s |

Round the following to 3 significant figures:

- | | |
|-------------|--------------------------|
| 26. 198.675 | 29. 4.4750×10^7 |
| 27. 6.2253 | 30. 0.0039964 |
| 28. 7189.66 | |

Round the following to 2 significant figures:

- | | |
|---------------------------|------------|
| 31. 112.6 | 34. 4.2579 |
| 32. 30.792 | 35. 84.500 |
| 33. 9.65×10^{-4} | |

Perform the following calculations and express the answer with the appropriate number of significant figures:

- | | |
|--|---|
| 36. $73.62 + 112.9$ | 41. $(1.00 \times 10^{-2} - 9.692 \times 10^{-4}) \times (3.42 \times 10^3)$ |
| 37. 167.42×1.94 | 42. $(6.6262 \times 10^{-34}) \times (2.998 \times 10^8) / (2.54 \times 10^{-9})$ |
| 38. $(46.21 \times 2.55) - (2.643 \times 0.662)$ | 43. $(1.285 \times 10^{-2}) + (1.24 \times 10^{-3}) + (1.879 \times 10^{-1})$ |
| 39. $(20.614 - 19.3) / 19.3$ | 44. $9.27 \times (4.987 - 4.962)$ |
| 40. $6.21 \times 10^3 + 3.640 \times 10^4$ | 45. $(1.00866 - 1.00728) / (6.02205 \times 10^{23})$ |

Answers

If you cannot figure out how to get the correct answer, go to your instructor, Science Tutoring Center, SI, etc.

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|---------------------------|--------------------------------------|----------------------------|
| 1. 6.6793×10^4 | 16. 2 | 31. 1.1×10^2 |
| 2. 5.43621×10^2 | 17. infinite | 32. 31 |
| 3. 6.43×10^{-3} | 18. 4 | 33. 9.7×10^{-4} |
| 4. 8.896740×10^5 | 19. 3 | 34. 4.3 |
| 5. 9.7×10^4 | 20. 4 | 35. 85 |
| 6. 4.300×10^{-5} | 21. 3 | 36. 186.5 |
| 7. 6×10^{-1} | 22. 1 or 2 or 3 | 37. 325 |
| 8. 2.12346×10^3 | 23. 4 | 38. 116 |
| 9. 3.14×10^2 | 24. 2 | 39. 0.067 |
| 10. 4.56×10^{-2} | 25. 3 | 40. 4.261×10^4 |
| 11. 3 | 26. 199 | 41. 31 |
| 12. 2 | 27. 6.23 | 42. 7.82×10^{-17} |
| 13. 3 | 28. 7.19×10^3 | 43. 0.2020 |
| 14. infinite | 29. 4.48×10^7 | 44. 0.23 |
| 15. 3 | 30. 0.00400 or 4.00×10^{-3} | 45. 2.29×10^{-27} |