

Significant Figures and Exponential Notation

1. How many significant figures are in each of the following numbers?

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|-----------|-------|------------|-------|
| a. 1127 | _____ | e. 1.410 | _____ |
| b. 0.072 | _____ | f. 0.00012 | _____ |
| c. 6.9 | _____ | g. 16,000 | _____ |
| d. 0.0130 | _____ | h. 3.7 | _____ |

2. Write each of the following numbers in proper exponential notation:

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|----------|-------|---------------|-------|
| a. 112 | _____ | d. 15.40 | _____ |
| b. 0.034 | _____ | e. 22,800,000 | _____ |
| c. 8,300 | _____ | f. 0.005 | _____ |

3. How many significant figures should be in the answer to each of the following calculations?

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|-------------------------|-------|-------------------------------|-------|
| a. $17.2 + 0.67$ | _____ | e. $0.517 / 0.2422$ | _____ |
| b. $47.826 - 2.4$ | _____ | f. $0.072 / 4.16$ | _____ |
| c. 12.4×5.1 | _____ | g. $0.37 \times 5.420 / 22.4$ | _____ |
| d. 1.27×3.1216 | _____ | | |

4. For each of these problems, complete the answer in exponential form with the correct number of significant figures.

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|----------------------------------------------|-------|
| a. $1.71 \times 10^3 \times 2.0 \times 10^2$ | _____ |
| b. $4.523 \times 10^3 / 2.71 \times 10^1$ | _____ |
| c. $4.8 \times 10^1 \times 3.5 \times 10^4$ | _____ |
| d. $1.64 \times 10^{-2} / 1.2 \times 10^2$ | _____ |
| e. $3.7 \times 10^4 / 8.42 \times 10^5$ | _____ |

5. Solve each of the following problems, expressing each answer to the proper number of significant figures. Use exponential form for (c) and (d).

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|------------------------------------------------------------------------|-------|
| a. $1.842 + 45.2 + 87.55$ | _____ |
| b. $714.3 - 18.56$ | _____ |
| c. $1.83 \times 10^4 \times 7.55 \times 10^7$ | _____ |
| d. $5.07 \times 10^{-4} \times 8.51 \times 10^{-2} / 2.92 \times 10^4$ | _____ |