

NAME:

## HONORS CHEMISTRY

SECTION:

CALCULATIONS WITH SIGNIFICANT FIGURES

- Solve the following problems. Report with the correct number of significant figures and appropriate units:
  - $3.414 \text{ s} + 10.02 \text{ s} + 58.325 \text{ s} + 0.00098 \text{ s}$
  - $2.326 \text{ h} - 0.10408 \text{ h}$
  - $10.19 \text{ m} \times 0.013 \text{ m}$
  - $140.01 \text{ cm} \times 26.042 \text{ cm} \times 0.0159 \text{ cm}$
  - $80.23 \text{ m} / 2.4 \text{ s}$
  - $(4.301 \text{ kg} - 2.317 \text{ kg}) / 1.9 \text{ cm}^3$
- An experiment calls for 16.156 g of substance A, 28.2 g of substance B, 0.0058 g of substance C, and 9.44 g of substance D.
  - How many significant digits are there in each measurement?
  - What is the total mass of substances in this experiment?
  - How many significant digits are present in the answer to part b?
- Write the following numbers in scientific notation and indicate the number of significant digits.
  - 156.90
  - 12,000
  - 0.00690
  - 0.0345
- Solve the following problems. Record your answers using scientific notation with the proper number of significant digits.
  - $(6.6 \times 10^{-8}) / (3.30 \times 10^{-4}) =$
  - $(7.4 \times 10^{10}) / (3.7 \times 10^3) =$
  - $(2.67 \times 10^{-3}) - (9.5 \times 10^{-4}) =$
  - $(2.3 \times 10^{-4}) \times (2.0 \times 10^{-3}) =$
  - $(2.5 \times 10^{-8}) \times (3.0 \times 10^{-7}) =$
  - $(1.56 \times 10^{-7}) + (2.43 \times 10^{-8}) =$