Name: _____

Number switching busywork

Scientific notation, rounding, significant figures, and conversions

1. Round each of these numbers to four significant figures.
   a. 1.00784
   b. 15.9994
   c. 2.9979×10^{8}
   d. 8.98755×10^{9}

2. Round the number given to the indicated number of significant figures.
   a. 30.973762 to 7 significant figures: _____
   b. 30.973762 to 6 significant figures: _____
   c. 30.973762 to 5 significant figures: _____
   d. 30.973762 to 4 significant figures: _____
   e. 30.973762 to 3 significant figures: _____
   f. 30.973762 to 2 significant figures: _____

3. Adjust the coefficients to express this number as a multiple of the indicated powers of ten.
   a. $35.453 \times 10^{6} =$ _____ $\times 10^{7}$
   b. $35.453 \times 10^{6} =$ _____ $\times 10^{8}$
   c. $35.453 \times 10^{6} =$ _____ $\times 10^{9}$
   d. $35.453 \times 10^{6} =$ _____ $\times 10^{5}$
   e. $35.453 \times 10^{6} =$ _____ $\times 10^{4}$
   f. $35.453 \times 10^{6} =$ _____ $\times 10^{3}$

4. Carry out the multiplications and report the results to the proper number of significant figures. Numbers expressed as integers are counts.

   a. $8 \cdot 32.059 =$

   b. $4 \cdot 30.973762 =$

   c. $6.022\ 140\ 76 \times 10^{23} \cdot 55.5 =$

   d. $2.9979 \times 10^{8} \cdot 0.250 =$

5. Carry out the operations and report the results to the proper number of significant figures. If the numbers are given in scientific notation, report the result in scientific notation as well. Numbers expressed as integers are counts.

   a. $2\ (1.00784) + 12.011 =$

   b. $24.304 + 2\ (35.457) =$

   c. $2\ (1.00784) + 15.99903 =$

   d. $22.989769 - 1.00784 =$

   e. $8.545 \times 10^{8} + 6.552 \times 10^{6} =$

   f. $5.0 \times 10^{3} + 26 =$

   g. $147.54 - 125 =$

6. Use the exact equivalence relations 1 gallon = 231 in^3, 1 gal = 8 pints, 1 lb = 453.592 37 g, 1 in = 2.54 cm, and the measured density of water 1 cm^3 = 0.997 g to find the mass in pounds of exactly 1 pint of water.

Bonus: Reading graduated cylinders

7. Report the volume of liquid inside the illustrated graduated cylinders to the appropriate precision.