

Math Review & Problem-Solving 6

SIGNIFICANT DIGITS:

Carry out the following calculations and report to the correct number of significant digits.

1) $80 \text{ cm} + 13.0 \text{ cm} =$

5) $0.7600 \text{ mm}^3 / 0.0152 \text{ mm} =$

2) $3.4 \times 10^{-9} \text{ m} + 1.27 \times 10^{-7} \text{ m} =$

6) $3 \text{ cm} \times 6 \text{ cm} =$

3) $750. \text{ g} + 677.4 \text{ g} =$

7) $(8.6 \text{ g} + 7.8 \text{ g}) / 23.51 \text{ cm}^3 =$

4) $1100 \text{ cm} + 8 \text{ cm} =$

8) $6.000 \times 10^{-3} \text{ m} \times 0.0020 \text{ m} =$

DIMENSIONAL ANALYSIS:

Carry out the following conversions and report to the correct number of significant digits.

9) Convert $8.6 \text{ } \mu\text{g}$ to dg

10) Convert $9.86 \times 10^8 \text{ dm}^2$ to km^2

11) Convert 13.6 g/mL to lb/ft^3

12) Convert $15.22 \text{ g Ba(NO}_3)_2$ to formula units.

13) What is mass is equal to 63.2 mmol (millimole) of benzoic acid, $\text{C}_7\text{H}_6\text{O}_2$?

SCIENTIFIC NOTATION

Express the following numbers in scientific notation with the proper number of significant digits:

14) 0.0000552×10^3

15) 35.882×10^{-6}

Express the following numbers in long form with the proper number of significant digits:

16) 3.000×10^3

17) 1.20×10^{-2}

18) 5.00×10^5

19) If 5.25 g of silver is added to a graduated cylinder containing 11.2 mL of water, to what level will the water level rise?