KEY

Math Review: Conversions, Significant Figures, and Density
Chemistry 210

1. Make the following conversions:

A) 5.66 m^3 to dm^3

$= 5660\ dm^3$

B) 67.3 nm to cm

$= 6.73 \times 10^{-5}$

C) 279.5 µg to mg

$= 0.2795\ mg$

D) 67.3 feet → dm

$$\frac{67.3\ ft}{1} \left| \frac{12\ in}{1\ ft} \right| \frac{2.54\ cm}{1\ in} \left| \frac{1\ dm}{10\ cm} \right| =$$

E) $4.52 \times 10^8\ nm^3 \rightarrow \mu m^3$

$$4.52 \times 10^8\ nm^3 \times \frac{1 \times 10^{-27}\ m^3}{1\ nm^3} \times \frac{1\ \mu m^3}{1 \times 10^{-18}\ m^3} = 0.452\ \mu m^3$$

2. Express the results of the following computations to the correct number of significant figures.

A) 25 x 3.11 = 78

B) 65.3 – 788 = −723

C) 256,000 + 87 = 256,000

D) 0.23100 – 0.0198 = 0.2112

E) 5 x 225.1 = 1000

$= 1 \times 10^3$

F) $\frac{3.32 \times 10^5 - 4.5 \times 10^4}{83.12} =$ 3450

G) $\frac{0.00300 \times 16.254 \times 7000.}{2.311 \times 10^{-5}} =$ 1.48×10^7

H) $\frac{2.500 \times 10^{10}}{3.12 \times 10^{-3}} + 4.15 \times 10^{14} =$ 4.23×10^{14}