Name _____*Key*_____ Class _____ Date _____

Significant Figures & Scientific Notation

1. State the number of significant figures in each measurement.

   3 a. 734 grams   **1** d. 0.003 second

   5 b. 82.400 meters   **3** e. 607 liters

   2 c. 92 000°C   **1** f. 1×10^{-4} hertz

2. Round the number at left to the number of significant figures stated in each column.

Number	Four significant figures	Three significant figures	Two significant figures	One significant figure
84.631	84.63	84.6	85	80
0.945 00	0.9450	0.945	0.95	0.9
7.953 10	7.953	7.95	8.0	8
2 058 268	2058000	2060 000	2100000	2 000000

3. Perform the following operations. Round the answers to the appropriate number of significant figures. Label.

   a. 8.2 cm $\times$ 6.08 cm $\times$ 15.0 cm   c. 23.4°C – 8.4°C

      750cm   **15.0°C**

   b. 34.8 meter / 3.048 seconds   d. 65.48 g + 3.0 g + 0.882 g + 26.46 g

      11.4 m/s   **95.8g**

4. Convert the following numbers from decimal to scientific notation. The answer must have the same number of significant figures and label as the original number.

   $1.5 \cdot 10^8$ km   a. 150 000 000 km (average distance between Earth and the sun)

   $1.98 \cdot 10^{-4}$ cm   b. 0.000 198 cm (diameter of a blood platelet)

   $7.400 \cdot 10^3$ g   c. 7400. grams (mass of a bowling ball)

   $6 \cdot 10^0$ km/hr   d. 6 km/hour (fast walking speed)

5. Convert the following numbers from scientific notation to decimal notation.

   13000 km   a. 1.3×10^4 km (diameter of Earth)

   3850 000mi²   b. 3.85×10^6 square miles (area of the U.S.)

   0.0080g   c. 8.0×10^{-3} gram (mass of a small spider)