Fill out each blank with equivalent measure and unit.

1. One meter = \_\_\_\_\_\_\_\_\_\_\_\_\_ centimeters.
2. One meter = \_\_\_\_\_\_\_\_\_\_\_\_\_ millimeters.
3. One kilometer = \_\_\_\_\_\_\_\_\_\_\_\_\_ meters.
4. One liter = \_\_\_\_\_\_\_\_\_\_\_\_\_ milliliters.
5. 1000 km = \_\_\_\_\_\_\_\_\_\_\_\_\_ .
6. 1 L = \_\_\_\_\_\_\_\_\_\_\_\_\_ mL .
7. 1 Kg = \_\_\_\_\_\_\_\_\_\_\_\_\_ g.
8. 1 g = \_\_\_\_\_\_\_\_\_\_\_\_\_mg .
9. 1000 m = \_\_\_\_\_\_\_\_\_\_\_\_\_ .

Fill in the chart.

Metric System

Volume

Mass

Length

Temperature

\_\_\_\_\_\_\_\_/\_\_\_\_\_\_\_\_\_

***Significant figures Rules***

Scientific measurements are characterized by varying degrees of uncertainty. Every measurement of a physical quantity is subject to such errors as experimental bias, inherent errors of measuring instruments, instrumental limitations, improper laboratory techniques, and deviations of repetitive measurements. To ensure that the degree of precision in data correctly reflects the certainty with which the value of each number is known, scientists apply the rules of significant figures.

The following rules will serve as a guide in determining the number of significant digits in a measured or calculated value.

**Rule 1:** In rounding

1. The last significant digit is unchanged if the next digit is less than 5
2. The last significant digit is increased by one if the next digit is greater than 5
3. If the number after the last significant digit is a 5 followed by any digits other than zero, increase the last significant digit by one
4. If the number after the last significant digit is a 5 followed by zeros, round the last significant digit to the even number

**Rule 2: All non-zero digits are significant!**

**Rule 3:** Zeros may or may not be significant

1. Any zero between two non-zero numbers are significant
2. All final zeros after the decimal are significant
3. If no non-zero digits precede the decimal point, the zeros following the decimal pont and preceding other digits are not significant
4. Final zeros in a whole number may or may not be significant. To be certain of the correct number of significant figures, such numbers should be written in sci notation.

**Rule 4:** In **addition or subtraction**, the number of digits to the right of the decimal in the answer should not exceed the smallest number of digits to the right of the decimal in any of the numbers being added or subtracted.

**Rule 5:** In **multiplication or division**, the number of significant digits in the answer must be the same as that in the factor, dividend, or divisor with the fewest significant digits.

**Rule 6:** In **serial multiplication and division**, it is desirable to determine the number of allowed significant figures in the answer before multiplying or dividing than to round off each number to one more significant digit than is necessary. The answer can then be rounded to the proper number of significant figures based on the number with the fewest significant figures.