SIGNIFICANT FIGURES

Name _____

A measurement can only be as accurate and precise as the instrument that produced it. A scientist must be able to express the accuracy of a number, not just its numerical value. We can determine the accuracy of a number by the number of significant figures it contains.

1) All digits 1-9 inclusive are significant.
   Example: 129 has 3 significant figures.
2) Zeros between significant digits are always significant.
   Example: 5,007 has 4 significant figures.
3) Trailing zeros in a number are significant only if the number contains a decimal point.
   Example: 100.0 has 4 significant figures.
   100 has 1 significant figure.
4) Zeros in the beginning of a number whose only function is to place the decimal point are not significant.
   Example: 0.0025 has 2 significant figures.
5) Zeros following a decimal significant figure are significant.
   Example: 0.000470 has 3 significant figures.
   0.47000 has 5 significant figures.

Determine the number of significant figures in the following numbers.

1. 0.02 _____
2. 0.020 _____
3. 501 _____
4. 501.0 _____
5. 5,000 _____
6. 5,000. _____
7. 6,051.00 _____
8. 0.0005 _____
9. 0.1020 _____
10. 10,001 _____

Determine the location of the last significant place value by placing a bar over the digit. (Example: $1.70\bar{0}$)

1. 8040 _____
2. 0.0300 _____
3. 699.5 _____
4. 2.000×10^2 _____
5. 0.90100 _____
6. 90,100 _____
7. 4.7×10^{-8} _____
8. 10,800,000. _____
9. 3.01×10^{21} _____
10. 0.000410 _____