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 <u>only</u> 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: 0.000<u>470</u> has 3 significant figures.
>   0.<u>47000</u> 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 _____

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 _____