Significant Figures (SIG FIGS)

\*We use sig figs to account for the degree of uncertainty in the final numerical result.

**The Rules!**

1. Non zero integers always count as sig figs
2. Zeros
3. **Leading zeros** precede non zero integers and they never count

Example: 0.0025

1. **Captive zeros** always count. They are in between non zero integers
2. **Trailing zeros** are only significant if the number is written with a decimal point. For example: 1000 only has one sig fig but 1000. has 4 sig figs. This is the tricky one and where people make mistakes.
3. Exact Numbers
4. Numbers that are determined by counting and not through experiment
5. Assumed to have unlimited number of sig figs
6. Arise from definitions. For example: 1 inch = 2.54 cm
7. Applies to scientific notation. 1.00 x 102 has 3 sig figs.

Applying sig figs to multiplication and division

* The number of sig figs in the result is the same number as in the measurement with the **smallest** number of sig figs (called the **limiting term**). For example: 6.25 x 2.3 would result in a 2 sig fig answer. 7.315÷ 3.25 would result in a 3 sig fig answer. **Write down all digits before rounding!!!**

Applying sig figs to addition and subtraction

* The **limiting term** is the one with the smallest number of decimal places.

For example: 16.15 – 0.4 (**remember that leading zeros do not count**) so the answer is 15.75 but we round to one decimal place so 15.8 is the answer. The smallest number in the problem only has one decimal place.