

Significant figure rules:

1. All digits 1-9 are significant.
2. Zeroes are significant when:
 1. They are in between any digits that are 1-9. Ex: 3005 has 4 significant digits
 2. They are to the right of a decimal point **and** to the right of a number whether that number is to the right or the left of the decimal point. Ex: 34.00 has 4 significant digits
 3. They indicate precision. The number is a zero instead of a 1 or a 9. It is not there to show the magnitude of the number. Ex: 2.00 has 3 significant digits; 0.0002 has 1 sig fig
 4. They are to the left of a designated decimal point. The decimal point is placed to show that all zeroes in the number are significant. Ex: 400. has 3 sig figs.
 5. If a bar is put over a zero, then it and all other numbers to the left of it are significant. 20000 has 3 sig figs (you don't have to fatten the zero, I just don't know how to do it otherwise.)

3. Zeroes are not significant when:

They are only there to show magnitude. If zeroes are there to show that a number is very big or very small, then the zeroes are not significant. If a zero is merely a place holder, then it is not significant.

Ex: 120000 has 2 sig figs, 0.0000456 has 3 sig figs.; 0.00040 has 2 sig figs

4. Only numbers that are the result of measurement are subject to the rules of significant figures. Many numbers used in science are the result of measurements.
5. Constants and counting numbers are considered to have an infinite amount of significant figures unless otherwise stated.

Math with Significant Figures:

General Rules:

1. Mathematics will never make an answer more significant than the least significant number used in the math. Your answers will never be more accurate than the data from which it came.
2. Do not round until the end. Every time you round, you are increasing the error in your numbers.

Multiplication and Division:

The multiplier, divisor or dividend that has the fewest number of significant figures determines how many significant figures are in the final answer.

Addition and Subtraction:

Find the "gaps" to the right of any digit. This can be a value that lacks numbers to the right of the decimal point, or it can be from zeroes that are merely place holders. Round out all of the uncertain digits. The digit furthest to the right should be one that was not the result of adding or subtracting any gaps.