

Order of Operations

To write a number in scientific notation:

1. Rewrite the number as a number between 1- 10 by moving the decimal till one nonzero digit remains in front of it
2. Write “ $\times 10$ ”
3. Count the number of times you moved the decimal and use it as the exponent on the “10”

Scientific Notation and Your Calculator

SIGNIFICANT FIGURES
in Numbers

- All non-zero digits are **always** significant.

ZERO IN A NUMBER
Leading Zeroes

- Precede all of the non-zero digits.
- **Are never** significant.

ZERO IN A NUMBER
Captive Zeroes

- Occur between non-zero digits.
- **Are always** significant.

ZERO IN A NUMBER

Trailing Zeroes

- Occur to the right of the non-zero digits.
- **Are** significant **only** if the number contains a decimal point.

How many significant figures are in each number?

- | | |
|----------------------|-------------|
| a. 0.0035 | f. 9.0 |
| b. 1.080 | g. 3050 |
| c. 2371 | h. 430700 |
| d. 2.9×10^5 | i. 0.003050 |
| e. 100.00 | j. 9000 |

Round to 3 significant figures

- a. 211.75
- b. 19.4350
- c. 0.00756575
- d. 1876.17
- e. 21564

SIGNIFICANT FIGURES in Calculations

- Multiplication & Division
- Find the number with the least number of significant figures.
- Round to the same number of significant figures in your answer.

SIGNIFICANT FIGURES in Calculations

Addition & Subtraction

- Find the number with the least decimal places.
- Round to the same number of decimal places in your answer.

Exact Numbers

- have an unlimited amount of sig. figs.
- ignore them when rounding

1. numbers that come from counting

2. numbers that are part of a formula

3. a definition

Study Check

Identify the numbers below as measured or exact, and give the number of significant figures in each measured number.

- A. 3 coins
- B. The diameter of a circle is 7.902 cm.
- C. 60 min = 1 h