

Flipping Physics Lecture Notes: Rounding and Working with Significant Figures in Physics

Rounding Rules:

- 1) If the number ends in something greater than 5, then you round up.
- 2) If the number ends in something less than 5, then you round down.
- 3) (The Arcane Rounding Rule) If the number ends in a perfect 5 (in other words all or no zeros after the five), you round to the even number.

Addition and Subtraction: Round to the smallest number to the right of the decimal.

Multiplication and Division: Round to the number that has the least number of significant digits from the measured or given values.

Rounding & Significant Figures Examples

Original Number	Number of Significant Figures Wanted	Rounded Number
36.0501	3	36.1
0.01249	2	0.012
26.5	2	26
26.500000000000	2	26
275	2	280
275.000000000000	2	280
$56.1 + 23.22 = 79.32$	Addition Rule	79.3
$1030 \times 5.1 = 5253$	Multiplication Rule	5300

When we do a problem in physics, you end with the least number of Significant Figures from the givens.

Givens: $\Delta x = 10.7$ m (3 sig figs), $v_i = 14$ m/s (2), & $\Delta t = 72.040$ s (5)

- Do your algebra and ***Don't Round in the Middle of a Problem!!***

Answer: Has 2 significant digits because the least number was on v_i or 2 sig figs.

You should only round when you give an answer. If part (b) of a problem uses the answer from part (a), you should use the unrounded answer from part (a) to solve for part (b) and then round to the correct number of significant figures.