

Significant digits, round-off errors, calculations, and rounding of the final results

Significant digits: 18,000 (meaning 1.8×10^4) has two signif. digits
18,001 has five significant digits

65.4 means between 65.35 and 65.45 (can use the "even" rule to decide which way to round if last digit is a "five").

In your calculations, use one or two extra digits in intermediate calculations to avoid round-off errors and then round off the final result appropriately.

What is appropriate rounding off of the final result?

When performing additions and subtractions only, the final result may have no more significant digits after the decimal point than the number with the fewest significant digits after the decimal point.

When performing multiplication and divisions only, the final result may have no more significant digits than the number with the fewest significant digits (ignore the decimal point).

When performing calculations of both types, use the stricter of the two rules in deciding how many significant digits to report.

Numbers associated with counts, as opposed to measurements, are assumed to be exact (unlimited significant digits).

The same rules of rounding apply equally to computer printouts/calculated results as to hand-calculated results.

DON'T report too few or too many digits in your final answers.