Significant figures/digits

Your answers should always be presented in significant figures/digits. This is an important reminder that a calculations is only as strong as its weakest link.

l. Quantitative observations and the calculations based on them should carry one digit beyond the last accurate (significant) digit. E.g., a measurement of 10.25 cm has 3 significant digits (the 1,0, and 2) plus one inaccurate digit (the 5).
2. The result of a multiplication or division has the same number of significant digits as the term with the fewest significant digits. E.g.,10.21* 10.231 = 104.458, but in significant digits 10.21 * 10.231= 104.5
3. The result of an addition or subtraction has the same number of decimal places as the value with the least number of decimal places. E.g 10.21 + 10.231 = 20.441, but in significant digits 10.21 + 10.231 = 20.44.
4. When performing a series of calculations, carry a few extra non-significant digits through the intermediate calculations, to avoid excessive round-off error. The final result should be presented in significant digits.
5. When converting to a logarithm, add one significant digit. E.g., log 104.5 = 2.0191

Units and notation

1. Carry over all units in your calculations and report the units of the final result.
2. It is generally best to use the SI system (metre-kg-second).
3. It is generally best to use the scientific notation, e.g., 1.5×10^{-3} rather than 0.0015.