Error Propagation Cheat Sheet

- **General Case:**

$$(\sigma_Z)^2 = \left(\frac{\partial Z}{\partial A}\right)^2 (\sigma_A)^2 + \left(\frac{\partial Z}{\partial B}\right)^2 (\sigma_B)^2 + \left(\frac{\partial Z}{\partial C}\right)^2 (\sigma_C)^2 + \cdots$$

- **Pre-formulated Examples**

Formula	Error Combination
$\boldsymbol{Z = A \pm B \pm C}$	$\boldsymbol{(\sigma_Z)^2 = (\sigma_A)^2 + (\sigma_B)^2 + (\sigma_C)^2}$
$\boldsymbol{Z = A \times B}$	$\boldsymbol{\left(\frac{\sigma_Z}{Z}\right)^2 = \left(\frac{\sigma_A}{A}\right)^2 + \left(\frac{\sigma_B}{B}\right)^2}$
$\boldsymbol{Z = A^n}$	$\boldsymbol{\frac{\sigma_Z}{Z} = n\frac{\sigma_A}{A}}$
$\boldsymbol{Z = \ln A}$	$\boldsymbol{\sigma_Z = \frac{\sigma_A}{A}}$
$\boldsymbol{Z = e^A}$	$\boldsymbol{\frac{\sigma_Z}{Z} = \sigma_A}$