

Condition number:

$$C_p = \frac{\left| \frac{\Delta y}{y} \right|}{\left| \frac{\Delta x}{x} \right|} = \frac{|\text{output relative error}|}{|\text{input relative error}|}$$

$C_p \approx 1$ – the task is *well-conditioned*

$C_p > 100$ – the task is *ill-conditioned*

Condition number for matrix

A – non-singular matrix

$$C_A = \|A\| \cdot \|A^{-1}\|$$