Mathematical Formulas for C Functions

1. **Maximum:** $\max(x) = \max\{x_0, x_1, \ldots, x_{n-1}\}$
2. **Minimum:** $\min(x) = \min\{x_0, x_1, \ldots, x_{n-1}\}$
3. **Mean:** $\mu = \frac{1}{n} \sum_{i=0}^{n-1} x_i$
4. **Standard Deviation:** $\sigma = \sqrt{\frac{1}{n} \sum_{i=0}^{n-1} (x_i - \mu)^2}$
5. **Skewness:** $\text{Sk} = \frac{1}{n\sigma^3} \sum_{i=0}^{n-1} (x_i - \mu)^3$
6. **Kurtosis:** $\text{Ku} = \frac{n \sum (x_i - \mu)^4}{(\sum (x_i - \mu)^2)^2}$
7. **RMS for 3 Arrays:** $\text{RMS}_i = \sqrt{a_i^2 + b_i^2 + c_i^2}$
8. **Zero Crossing Count:** ZC = count of sign changes in adjacent pairs
9. **Signal Energy:** $\text{SE} = \sum_{i=0}^{n-1} x_i^2$
10. **Peak-to-Peak:** $\text{P2P} = \max(x) - \min(x)$
11. **Peak-to-RMS Ratio:** $\text{Pk2RMS} = \frac{\max |x_i|}{\sqrt{\frac{1}{n} \sum x_i^2}}$
12. **Root Sum of Squares:** $\text{RSSQ} = \sqrt{\sum x_i^2}$