

3.4: Chapter 3 Formulas

Sample Mean: $\bar{x} = \frac{\sum x}{n}$	Population Mean: $\mu = \frac{\sum x}{N}$
Weighted Mean: $\bar{x} = \frac{\sum(xw)}{\sum w}$	Range = Max – Min
Sample Standard Deviation: $s = \sqrt{\frac{\sum(x-\bar{x})^2}{n-1}}$	Population Standard Deviation = σ
Sample Variance: $s^2 = \frac{\sum(x-\bar{x})^2}{n-1}$	Population Variance = σ^2
Coefficient of Variation: $CVar = \left(\frac{s}{\bar{x}} \cdot 100\right) \%$	Z-Score: $z = \frac{x-\bar{x}}{s}$
Percentile Index: $i = \frac{(n+1)p}{100}$	Interquartile Range: $IQR = Q_3 - Q_1$
Empirical Rule: $z = 1, 2, 3 \Rightarrow 68\%, 95\%, 99.7\%$	Outlier Lower Limit: $Q_1 - (1.5 \cdot IQR)$
Chebyshev's Inequality: $\left(\left(1 - \frac{1}{(z)^2}\right) \cdot 100\right) \%$	Outlier Upper Limit: $Q_3 + (1.5 \cdot IQR)$

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