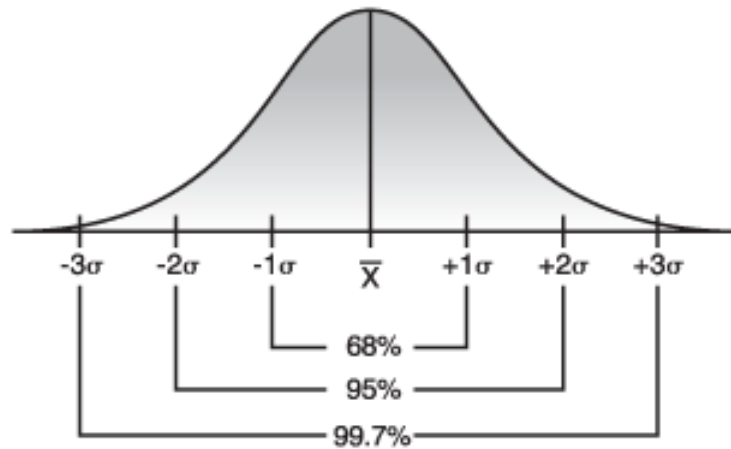


Empirical Rule & Chebyshev's Theorem

1) Empirical Rule:

Data set with distribution approximately bell-shaped.



2) Chebyshev's Theorem:

The proportion of any data set lying within k standard

deviations of the mean is always $1 - \frac{1}{k^2}$, $k > 1$.

| k | At least % within the interval $\bar{x} \pm k \cdot s$ | At most % outside of the interval $\bar{x} \pm k \cdot s$ |
|------|--|---|
| 1.25 | 36% | 64% |
| 1.50 | 56% | 44% |
| 1.75 | 67% | 33% |
| 2.00 | 75% | 25% |
| 2.25 | 80% | 20% |
| 2.50 | 84% | 16% |
| 2.75 | 87% | 13% |
| 3.00 | 89% | 11% |