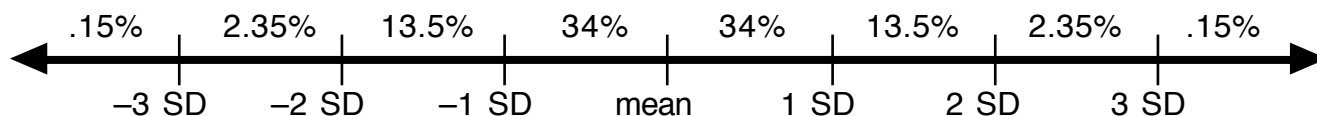


Chapters 1, 2, 3 Test Notes

Chapter 3

The 68 – 95 – 99.7 Empirical Rule for Data Under a Bell Shaped Curve



Chabyshev's Rule

For any distribution the proportion of the data that lies **within K standard deviations** of the mean

is at least $1 - \frac{1}{K^2}$ for all $K > 1$

A data point x is K standard deviations from the mean where

$$K = \frac{|x - \text{the mean}|}{\text{the standard deviation}}$$

Converting an x value into it's z score

$$z = \frac{(x - \bar{x})}{s_x}$$

$$z = \frac{(x - \mu)}{\sigma}$$

Usual and Unusual Values

For bell shaped data we consider all values within 2 standard deviations from the mean to be **Usual**. We consider all values outside of 2 standard deviations from the mean to be **Unusual**

Percentiles in a SORTED LIST

$$\text{percentile of value } x = \frac{\text{number of values less than } x}{\text{total number of values in list}} \cdot 100$$

The value of P_k is the data point at the location L on the sorted list

where L is found by

$$L = \text{the next integer} > \frac{k}{100} \cdot n$$