12.3 – Measures of Dispersion

- Measures of dispersion are used to indicate the *spread of the data*.

Range

- The **range** is the difference between the highest and lowest values; it indicates the total spread of the data.

Range = highest value – lowest value

Example

- Nine different employees were selected and the amount of their salary was recorded. Find the range of the salaries.

$24,000	$32,000	$26,500
$56,000	$48,000	$27,000
$28,500	$34,500	$56,750

Standard Deviation

- The **standard deviation** measures how much the data *differ from the mean*. It is symbolized with *s* when it is calculated for a sample, and with σ (Greek letter sigma) when it is calculated for a population.

$$s = \sqrt{\frac{\sum (x - \bar{x})^2}{n - 1}}$$

- $\bar{x}$ is the mean
- n represents the number of data values

Examples

- Find the standard deviation for the numbers: 1, 5, 6, 8, 10

- P. 705, #32