

## Standard Deviation Worksheet

The standard deviation of a set of data is its average distance from the mean. It is a measure of spread, commonly used with normal distributions.

**Standard Deviation:**  $s = \sqrt{\frac{\sum(x - \bar{x})^2}{n - 1}}$  where  $n$  = number of data points,  $\bar{x}$  = mean,  $\Sigma$  = sum of all

Example: 8, 6, 0, 2, 9

$$\bar{x} = \text{mean} = (8 + 6 + 0 + 2 + 9) \div 5 = 5$$

| X            | (x - mean) | (x - mean) <sup>2</sup> |
|--------------|------------|-------------------------|
| 8            |            |                         |
| 6            |            |                         |
| 0            |            |                         |
| 2            |            |                         |
| 9            |            |                         |
| <b>Total</b> |            |                         |

S =

1. 4, 3, 9, 12, 2

Mean =

| x            | (x - mean) | (x - mean) <sup>2</sup> |
|--------------|------------|-------------------------|
| 4            |            |                         |
| 3            |            |                         |
| 9            |            |                         |
| 12           |            |                         |
| 2            |            |                         |
| <b>Total</b> |            |                         |

S =

2. 14, 54, 23, 6, 3

Mean =

| x            | (x - mean) | (x - mean) <sup>2</sup> |
|--------------|------------|-------------------------|
| 14           |            |                         |
| 54           |            |                         |
| 23           |            |                         |
| 6            |            |                         |
| 3            |            |                         |
| <b>Total</b> |            |                         |

S =

3. 6, 6, 10, 12, 3, 5

Mean =

| x            | (x - mean) | (x - mean) <sup>2</sup> |
|--------------|------------|-------------------------|
| 6            |            |                         |
| 6            |            |                         |
| 10           |            |                         |
| 12           |            |                         |
| 3            |            |                         |
| 5            |            |                         |
| <b>Total</b> |            |                         |

S =