

CALCULATING STANDARD DEVIATION

The standard deviation is used to tell how far on average any data value is from the mean. The smaller the standard deviation, the closer the scores are on average to the mean. When the standard deviation is large, the scores are more widely spread on average from the mean.

Problem #1: The basketball team played ten games. Find the standard deviation for the number of baskets scored by a team member for the ten games: **8, 4, 6, 6, 7, 7, 9, 4, 8, 5**

Follow the steps below to calculate the standard deviation.

Step 1: List the scores in the 'number' column of the table below.

Step 2: Find the mean of the data set and place your answer below on line A.

Step 3: Subtract the mean from each of the scores. Record the difference in the 'difference from the mean' column in the table below.

Step 4: Find the square of each number in the 'difference from the mean' column and record the result in the 'square of the difference' column. Don't forget that a negative squared is a positive!

Step 5: Find the sum of the numbers in the 'square of the difference' and record your answer in the table.

Step 6: The number of values in the data set is labeled **n**. Record the number in this data set on line B.

Step 7: Take the sum of the $(\text{Difference from the Mean})^2$ and divide it by n . Record your answer on line C.

Step 8: The square root of line C is the standard deviation. Record your answer on line D below.

Number	Difference from the mean	$(\text{Difference from the mean})^2$
Sum of $(\text{Difference from the mean})^2$		→

A. Mean: _____

B. n: _____

C. Sum of $(\text{Difference from the Mean})^2$ divided by (n) : _____ = variance.

D. Standard deviation = square root of variance. Standard deviation = _____.

You Try!

#2) Find the standard deviation for the following test scores. **86, 100, 92, 96, 87, 94, 75**

Follow the steps below to calculate the standard deviation.

Step 1: List the scores in the 'number' column of the table below.

Step 2: Find the mean of the data set and place your answer below on line A.

Step 3: Subtract the mean from each of the scores. Record the difference in the 'difference from the mean' column in the table below.

Step 4: Find the square of each number in the 'difference from the mean' column and record the result in the 'square of the difference' column. Don't forget that a negative squared is a positive!

Step 5: Find the sum of the numbers in the 'square of the difference' and record your answer in the table.

Step 6: The number of values in the data set is labeled **n**. Record the number in this data set on line B.

Step 7: Take the sum of the $(\text{Difference from the Mean})^2$ and divide it by n . Record your answer on line C.

Step 8: The square root of line C is the standard deviation. Record your answer on line D below.

Score	Difference from the mean	$(\text{Difference from the mean})^2$
Sum of $(\text{Difference from the mean})^2$		

A. Mean: _____

B. n: _____

C. Sum of $(\text{Difference from the Mean})^2$ divided by (n) : _____ = variance.

D. Standard deviation = square root of variance. Standard deviation = _____.