

Variance and Standard Deviation

Treat each data set as the stated population or sample. Show the mean and sum of squared deviations, divide by n or n - 1 as stated, and round only the final variance and standard deviation to the nearest tenth. Include the given units.

1. The values are 48.3, 48.6, 48.9, 49.2, 49.5 degrees. Treat them as a sample. Find the sample variance and standard deviation.

Data	48.3	48.6	48.9	49.2	49.5
Use	sample				

2. The values are 30, 31, 32, 33, 35, 36, 37, 38 minutes. Treat them as the entire population. Find the population variance and standard deviation.

Data	30	31	32	33	35	36	37	38
Use	population							

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Treat each data set as the stated population or sample. Show the mean and sum of squared deviations, divide by n or n - 1 as stated, and round only the final variance and standard deviation to the nearest tenth. Include the given units.

3. The values are 66, 68, 70, 72, 74, 78, 80, 82, 84, 86 points. Treat them as a sample. Find the sample variance and standard deviation.

Data	66	68	70	72	74	78	80	82	84	86
Use	sample									

4. The values are 16.1, 16.5, 16.9, 17.3, 18.1, 18.5, 18.9, 19.3 degrees. Treat them as the entire population. Find the population variance and standard deviation.

Data	16.1	16.5	16.9	17.3	18.1	18.5	18.9	19.3
Use	population							

Variance and Standard Deviation

Treat each data set as the stated population or sample. Show the mean and sum of squared deviations, divide by n or n - 1 as stated, and round only the final variance and standard deviation to the nearest tenth. Include the given units.

5. The values are 69.5, 69.7, 69.9, 70.1, 70.3, 70.7, 70.9, 71.1, 71.3, 71.5 minutes. Treat them as the entire population. Find the population variance and standard deviation.

Data	69.5	69.7	69.9	70.1	70.3	70.7	70.9	71.1	71.3	71.5
Use	population									

6. The values are 49, 51, 53, 55, 57 minutes. Treat them as a sample. Find the sample variance and standard deviation.

Data	49	51	53	55	57
Use	sample				

Math Sheet

Name _____ Score _____ Teacher _____ Date _____

Variance and Standard Deviation

Worked Answer Key

Treat each data set as the stated population or sample. Show the mean and sum of squared deviations, divide by n or $n - 1$ as stated, and round only the final variance and standard deviation to the nearest tenth. Include the given units.

1. The values are 48.3, 48.6, 48.9, 49.2, 49.5 degrees. Treat them as a sample. Find the sample variance and standard deviation.

Data	48.3	48.6	48.9	49.2	49.5
Use	sample				

Answer: variance 0.2 degrees squared; standard deviation 0.5 degrees

- Mean = 48.9 degrees.
- Sum of squared deviations = 0.9 degrees squared.
- Sample variance = $0.9 / (n - 1 = 4) = 0.2$ degrees squared.
- Sample standard deviation = square root of $[0.9 / 4] = 0.5$ degrees.

2. The values are 30, 31, 32, 33, 35, 36, 37, 38 minutes. Treat them as the entire population. Find the population variance and standard deviation.

Data	30	31	32	33	35	36	37	38
Use	population							

Answer: variance 7.5 minutes squared; standard deviation 2.7 minutes

- Mean = 34 minutes.
- Sum of squared deviations = 60 minutes squared.
- Population variance = $60 / (n = 8) = 7.5$ minutes squared.
- Population standard deviation = square root of $[60 / 8] = 2.7$ minutes.

Math Sheet

Name _____ Score _____ Teacher _____ Date _____

Variance and Standard Deviation

Worked Answer Key

Treat each data set as the stated population or sample. Show the mean and sum of squared deviations, divide by n or $n - 1$ as stated, and round only the final variance and standard deviation to the nearest tenth. Include the given units.

3. The values are 66, 68, 70, 72, 74, 78, 80, 82, 84, 86 points. Treat them as a sample. Find the sample variance and standard deviation.

Data	66	68	70	72	74	78	80	82	84	86
Use	sample									

Answer: variance 48.9 points squared; standard deviation 7.0 points

- Mean = 76 points.
- Sum of squared deviations = 440 points squared.
- Sample variance = $440 / (n - 1 = 9) = 48.9$ points squared.
- Sample standard deviation = square root of $[440 / 9] = 7.0$ points.

4. The values are 16.1, 16.5, 16.9, 17.3, 18.1, 18.5, 18.9, 19.3 degrees. Treat them as the entire population. Find the population variance and standard deviation.

Data	16.1	16.5	16.9	17.3	18.1	18.5	18.9	19.3
Use	population							

Answer: variance 1.2 degrees squared; standard deviation 1.1 degrees

- Mean = 17.7 degrees.
- Sum of squared deviations = 9.6 degrees squared.
- Population variance = $9.6 / (n = 8) = 1.2$ degrees squared.
- Population standard deviation = square root of $[9.6 / 8] = 1.1$ degrees.

Math Sheet

Name _____ Score _____ Teacher _____ Date _____

Variance and Standard Deviation

Worked Answer Key

Treat each data set as the stated population or sample. Show the mean and sum of squared deviations, divide by n or $n - 1$ as stated, and round only the final variance and standard deviation to the nearest tenth. Include the given units.

5. The values are 69.5, 69.7, 69.9, 70.1, 70.3, 70.7, 70.9, 71.1, 71.3, 71.5 minutes. Treat them as the entire population. Find the population variance and standard deviation.

Data	69.5	69.7	69.9	70.1	70.3	70.7	70.9	71.1	71.3	71.5
Use	population									

Answer: variance 0.4 minutes squared; standard deviation 0.7 minutes

- Mean = 70.5 minutes.
- Sum of squared deviations = 4.4 minutes squared.
- Population variance = $4.4 / (n = 10) = 0.4$ minutes squared.
- Population standard deviation = square root of $[4.4 / 10] = 0.7$ minutes.

6. The values are 49, 51, 53, 55, 57 minutes. Treat them as a sample. Find the sample variance and standard deviation.

Data	49	51	53	55	57
Use	sample				

Answer: variance 10.0 minutes squared; standard deviation 3.2 minutes

- Mean = 53 minutes.
- Sum of squared deviations = 40 minutes squared.
- Sample variance = $40 / (n - 1 = 4) = 10.0$ minutes squared.
- Sample standard deviation = square root of $[40 / 4] = 3.2$ minutes.