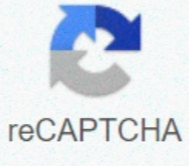




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## Calculating standard deviation worksheet with answers pdf

Calculating mean standard deviation in excel. Standard deviation worksheet answers. Calculating standard deviation worksheet with answers. How to calculate standard deviation pdf. Mean and standard deviation worksheet answers.

When investment analysts want to understand the risks associated with a mutual fund or a hedge fund, they look first and foremost at its standard deviation. This measurement of average variance has a prominent place in many fields related to statistics, economics, accounting, and finance. For a given data set, standard deviation measures how spread out the numbers are from an average value. By measuring the standard deviation of a portfolio's annual rate of return, analysts can see how consistent the returns are over time. A mutual fund with a long track record of consistent returns will display a low standard deviation. A growth-oriented or emerging market fund is likely to have greater volatility and will have a higher standard deviation. Therefore, it is inherently riskier. Standard deviation can show the consistency of an investment's return over time. A fund with a high standard deviation shows price volatility. A fund with a low standard deviation tends to be more predictable. Standard deviation is calculated by taking the square root of the variance, which itself is the average of the squared differences of the mean.



One of the reasons for the widespread popularity of the standard deviation measurement is its consistency. Standard deviation from the mean represents the same thing whether you are looking at gross domestic product (GDP), crop yields, or the height of various breeds of dogs. Moreover, it is always calculated in the same units as the data set. You don't have to interpret an additional unit of measurement resulting from the formula. For example, suppose a mutual fund achieves the following annual rates of return over the course of five years: 4%, 6%, 8.5%, 2%, and 4%. The mean value, or average, is 4.9%. The standard deviation is 2.46%. Every value is expressed as a percentage, making it easier to compare the relative volatility of several mutual funds. Due to its consistent mathematical properties, 68% of the values in any data set lie within one standard deviation of the mean, and 95% lie within two standard deviations of the mean. In investing, standard deviations are generally demonstrated with the use of Bollinger bands. Developed by the technical trader John Bollinger in the 1980s, Bollinger bands are a series of lines that can help identify trends in a given security. At the center is the exponential moving average (EMA), which reflects the average price of the security over an established time frame.

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### Quiz & Worksheet - Finding Standard Deviation

http://study.com/exam/quiz-worksheet-finding-standard-deviation.html

1. Find the standard deviation for the following data set: 5, 6, 2, 6, 3, 7, 4. Assume that the set represents a population.

- a. 3.24
- b. 4.72
- c. 1.87
- d. 2.78

2. Fill in the blank: For a given data set with a non-zero variance, the standard deviation will be \_\_\_\_\_ if the set is treated as the entire population compared to the sample of the population.

- a. zero
- b. higher
- c. the same
- d. lower

3. Which of the following is true?

- a. The standard deviation of a data set is always greater than the mean.
- b. The standard deviation of a data set is always positive.
- c. The standard deviation and variance of a data set will never be equal.
- d. The variance of a data set is always greater than the standard deviation.



To either side of this line are bands set one to three standard deviations away from the mean. These outer bands oscillate with the moving average according to changes in price. In addition to its numerous other useful applications, Bollinger Bands are used as an indicator of market volatility. When a security has experienced a period of great volatility, the bands are wide apart. As volatility decreases, the bands narrow, hugging the EMA. Standard deviation measures consistency. Consistency is good, but it's not the only measure of a fund's quality. Even the most range-bound charts experience brief spurts of volatility from time to time, often after earnings reports or product announcements. In these charts, normally narrow Bollinger bands suddenly bubble out to accommodate the spike in activity. Once things settle again, the bands narrow. Because many investment techniques are dependent on changing trends, being able to identify highly volatile stocks at a glance can be especially useful. While important, standard deviations should not be taken as an end-all measurement of the worth of an individual investment or a portfolio.

### Worksheet on Frequency Distribution

In worksheet on frequency distribution the questions are based on arranging data in ascending order or descending order and constructing the frequency distribution table.

1. Arrange the following data in ascending order.

- (a) 7, 2, 10, 14, 0, 6, 15, 24, 8, 3
- (b) 4.6, 8.1, 2.0, 3.5, 0.7, 9.3, 1.4, 0.8

2. Arrange the following data in descending order.

- (a) 14, 2, 0, 10, 6, 1, 22, 13, 28, 4, 8, 16
- (b) 1.2, 3.5, 0.1, 0.3, 2.4, 8.6, 5.0, 3.7, 0.7, 0.9

3. Construct the frequency table for each of the following.

- (a) 4, 3, 6, 5, 2, 4, 3, 3, 6, 4, 2, 3, 2, 2, 3, 3, 4, 5, 6, 4, 2, 3, 4
- (b) 6, 7, 5, 4, 5, 6, 6, 8, 7, 9, 6, 5, 6, 7, 7, 8, 9, 4, 6, 7, 6, 5

4. The marks obtained out of 25 by 30 students of a class in the examination are given below.

20, 6, 23, 19, 9, 14, 15, 3, 1, 12, 10, 20, 13, 3, 17, 10, 11, 6, 21, 9, 6, 10, 9, 4, 5, 1, 5, 11, 7, 24

Represent the above data as a grouped data taking the class interval 0 - 5

5. Complete the table given below.

(a)

For example, a mutual fund that returns between 5% and 7% every single year has a lower standard deviation than a competing fund that returns between 6% and 16% every year, but that doesn't make it a better choice. It is important to note that standard deviation can only show the dispersion of annual returns for a mutual fund, which does not necessarily imply future consistency with this measurement. Economic factors such as interest rate changes can always affect the performance of a mutual fund. Even as an assessment of the risks associated with a mutual fund, standard deviation is not a standalone answer. For example, standard deviation only shows the consistency (or inconsistency) of the fund's returns. It does not show how well the fund performs against its benchmark, which is measured as beta. Another potential drawback of relying on standard deviation is that it assumes a bell-shaped distribution of data values. This means the equation indicates that the same probability exists for achieving values above the mean or below the mean. Many portfolios do not display this tendency, and hedge funds especially tend to be skewed in one direction or another. The more securities held in a portfolio, and the more variety of types of securities, the less each individual security and its standard deviation matter to the whole portfolio. Also, as with any statistical model, large data sets are more reliable than small data sets. The 4.9% mean and 2.46% standard deviation in the example above is not as reliable as the same values produced from 50 calculations rather than five. So for the example above, 68% of the yearly returns should be between 2.44% and 7.36% (4.9% +/- 2.46%) and 95% of the yearly returns should be between -0.02% and 9.82% (4.9% +/- 2\*2.46%).