

# Statistics Calculators for Math 105

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This text was compiled on 03/18/2025

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## Licensing

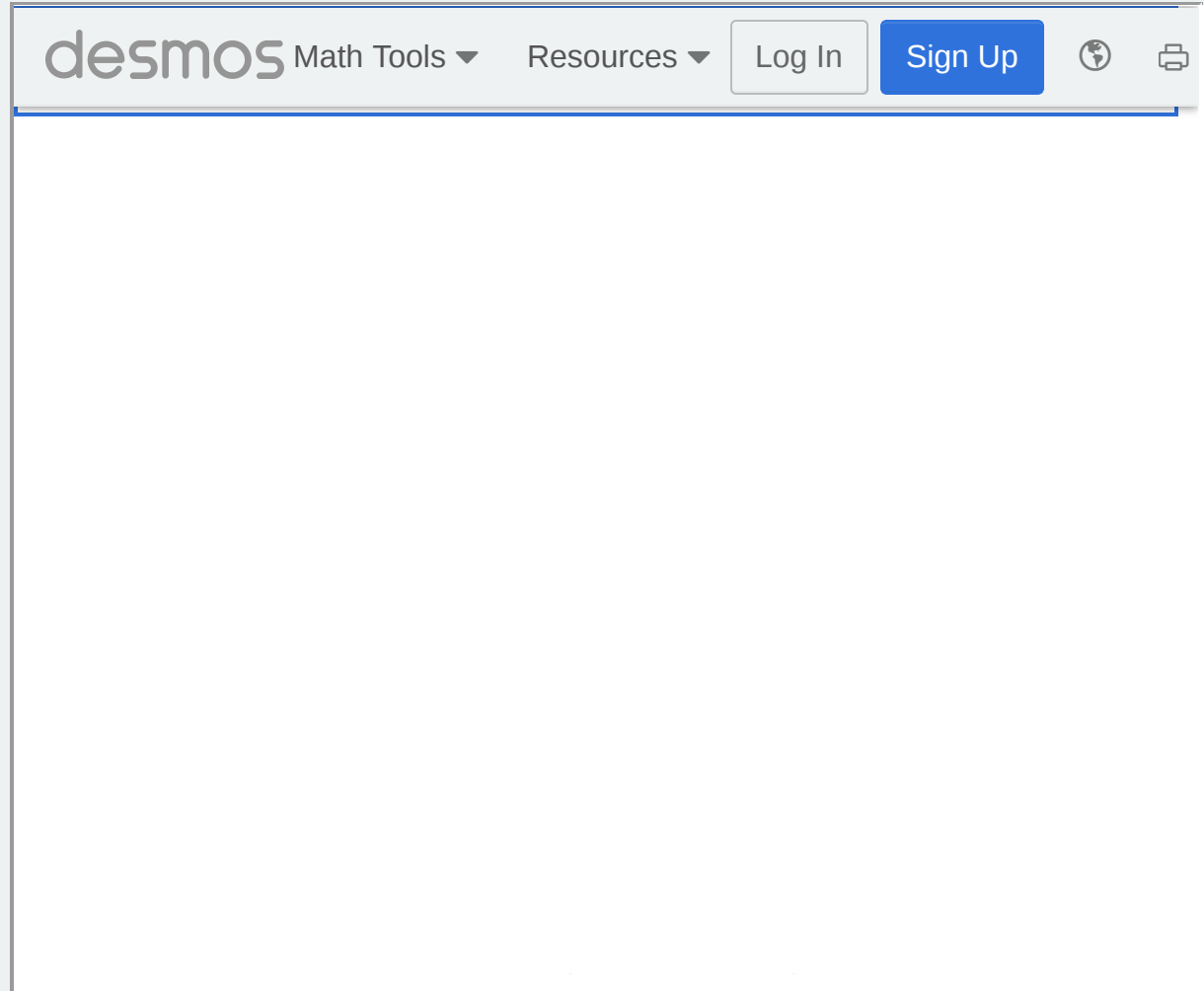
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## 1: Scientific Calculator powered by DESMOS

### Scientific Calculator powered by DESMOS

This is a scientific calculator powered by DESMOS, and the same calculator is also available at the bottom of each statistics calculator. Please report error to Dr. Jessica Kuang at [jkuangATvcccd.edu](mailto:jkuangATvcccd.edu).



1: Scientific Calculator powered by DESMOS is shared under a [not declared](#) license and was authored, remixed, and/or curated by LibreTexts.

## 2: One Variable Statistics

### One Variable Statistics

This calculator computes the mean, standard deviation, and 5-number summary from a one-variable data set. Please report the error to Dr. Jessica Kuang at [jkuangATvcccd.edu](mailto:jkuangATvcccd.edu).

To learn how to use this calculator, please watch a [short video](#) here.

#### Input

Type in the values from the data set separated by commas (for example, 2,4,5,8,11,2), choose between population standard deviation and sample standard deviation and click Calculate.

- ☐ Population Standard Deviation  
☐ Sample Standard Deviation

Calculate

#### Output

Mean:

Minimum:

Q1:

Median:

Q3:

Maximum:

Standard Deviation:

Variance:

Interquartile Range (IQR):

Sample Size:

Scientific Calculator

2: One Variable Statistics is shared under a [CC BY](#) license and was authored, remixed, and/or curated by LibreTexts.



### 3: Mean and Standard Deviation from a Frequency Table

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#### Mean and Standard Deviation from a Frequency Table

This calculator computes mean, standard deviation, and 5-number summary from a frequency or probability distribution table. Please report any error to Dr. Jessica Kuang at [jkuangATvcccd.edu](mailto:jkuangATvcccd.edu).

To learn how to use this calculator, please watch a [short video](#) here.

#### Input

Type in the data values and frequencies (in whole numbers or decimals) below.

data value

frequency

☒ Population Standard Deviation

☐ Sample Standard Deviation

Calculate

#### Output

Mean:

Standard Deviation:

Five Point Summary:

Sample Size:

Scientific Calculator

3: Mean and Standard Deviation from a Frequency Table is shared under a [CC BY](#) license and was authored, remixed, and/or curated by LibreTexts.

## 4: Binomial Probability Distribution

### Binomial Probability Distribution

This calculator computes  $P(a \leq x \leq b)$ , where  $x$  is a binomial random variable, and  $a$  and  $b$  are the lower bound and the upper bound for  $x$  respectively. Please report the error to Dr. Jessica Kuang at [jkuangATvcccd.edu](mailto:jkuangATvcccd.edu).

To learn how to use this calculator, watch a [short video](#) here.

#### Input

Enter the lower bound and the upper bound for the number of successes, the number of trials ( $n$ ), and the probability of success ( $p$ ), and then hit Calculate.

Lower Bound:

Upper Bound:

$n$ :

$p$  (enter a decimal):

Calculate

#### Output

Probability:

Scientific Calculator

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## 5: Normal Probability Distribution

### Normal Probability Distribution

This calculator computes  $P(a < x < b)$ , where  $x$  is a normal random variable, and  $a$  and  $b$  are the lower bound and upper bound for  $x$ . Please report the error to Dr. Jessica Kuang at [jkuangATvcccd.edu](mailto:jkuangATvcccd.edu).

To learn how to use this calculator, please watch a [short video](#) here.

#### Input

Mean:	Standard Deviation:
<input type="text"/>	<input type="text"/>

#### Output

Enter 2 out of 3 values below to either calculate the probability or a boundary value  
(enter integers or decimals only)

Lower Bound:	Upper Bound:	Probability:
<input type="text"/>	<input type="text"/>	<input type="text"/>

Calculate

Error

Message:

Scientific Calculator

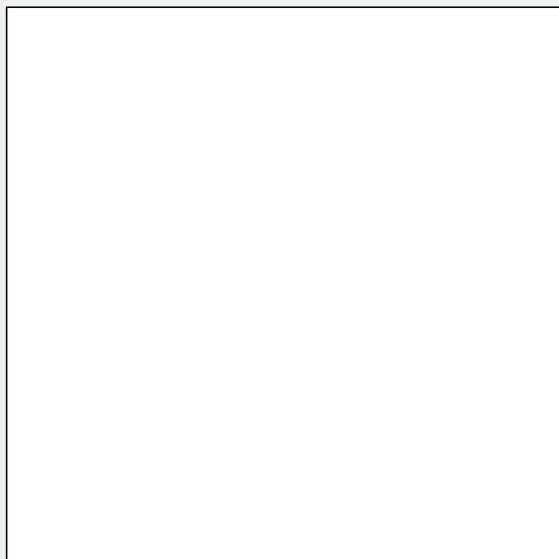
5: Normal Probability Distribution is shared under a [CC BY](#) license and was authored, remixed, and/or curated by LibreTexts.

## 6: Linear Correlation and Regression

### Linear Correlation and Regression

This calculator creates a scatter plot, the regression equation,  $r$  and  $r^2$ , and performs the hypothesis test for a nonzero correlation. Please report the error to Dr. Jessica Kuang at [jkuangATvcccd.edu](mailto:jkuangATvcccd.edu).

To learn how to use this calculator, please watch a [short video](#) here.



#### Input

Put the independent variable's data separated by commas in the first row and the dependent variable's data separated by commas in the second row, then click Plot Points and Calculate.

Explanatory/Independent

Variable

(x):

Response/Dependent

Variable

(y):

Plot Points and Calculate

Reset

#### Output

Regression Equation:

$r$ :

$r^2$

:

$p$

-

$v$

$a$

$l$

$u$

$e$

:

☒ Hypothesis:  $H_0 : \rho = 0, H_1 : \rho \neq 0$

☐ Hypothesis:  $H_0 : \rho = 0, H_1 : \rho < 0$

☐ Hypothesis:  $H_0 : \rho = 0, H_1 : \rho > 0$

Test Statistic ( $t$ ):

Scientific Calculator



## 7: Confidence Interval for a Population Proportion

### Confidence Interval for a Population Proportion

This calculator creates confidence intervals for a population proportion given statistics. Please report the error to Dr. Jessica Kuang at [jkuangATvcccd.edu](mailto:jkuangATvcccd.edu).

To learn how to use this calculator, please watch a [short video](#) here.

#### Input

Fill in the sample size ( $n$ ), the number of successes ( $x$ ), and the confidence level (CL), then hit Calculate. Write the confidence level as a decimal. For example, for a 95% confidence level, enter 0.95.

Sample Size ( $n$ ):

Number of Successes ( $X$ ):

Confidence Level (enter a decimal):

Calculate

#### Output

Point Estimate ( $\hat{p}$ ):

Lower Bound:

Upper Bound:

Scientific Calculator

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## 8: Sample Size to Estimate a Population Proportion

### Sample Size to Estimate a Population Proportion

This calculator computes the sample size needed to estimate a population proportion. Please report the error to Dr. Jessica Kuang at [jkuangATvcccd.edu](mailto:jkuangATvcccd.edu).

To learn how to use this calculator, please watch a [short video](#) here.

#### Input

Fill in the estimation for P (or choose no estimation for P), the error bound and the confidence level, then hit "Calculate " and the needed sample size will be calculated for you.



No Estimate for p



Have Estimate for p

Estimate for p (enter a decimal):

Error Bound (enter a decimal):

Confidence Level (enter a decimal):

Calculate

#### Output

Sample Size (n):

Scientific Calculator

Estimate for p:

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## 9: Confidence Interval for a Population Mean Given Statistics

### Confidence Interval for a Population Mean Given Statistics

This calculator creates a confidence interval for a population mean given statistics. Please report the error to Dr. Jessica Kuang at [jkuangATvcccd.edu](mailto:jkuangATvcccd.edu).

To learn how to use this calculator, please watch a [short video](#) here.

#### Input

Fill in the sample size ( $n$ ), the sample mean ( $\bar{x}$ ), the sample standard deviation ( $s$ ), and the confidence level (CL), then click Calculate. Write the confidence level as a decimal. For example, for a 95% confidence level, enter 0.95.

Sample Size ( $n$ ):

Sample Mean ( $\bar{x}$ ):

Standard Deviation ( $s$ ):

Confidence Level (enter a decimal):

Calculate

#### Output

Lower Bound:

Upper Bound:

Scientific Calculator

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## 10: Confidence Interval for a Population Mean Given Data

### Confidence Interval for a Population Mean Given Data

This calculator creates a confidence interval for a population mean given a set of data. Please report the error to Dr. Jessica Kuang at [jkuangATvcccd.edu](mailto:jkuangATvcccd.edu).

To learn how to use this calculator, please watch a [short video](#) here.

#### Input

Type in the values from the data set separated by commas, for example, 2,4,5,8,11,2. Then type in the confidence level (CL) and hit Calculate. Write the confidence level as a decimal. For example, for a 95% confidence level, enter 0.95.

Data:

Confidence Level (enter a decimal):

Calculate

#### Output

Sample Mean ( $\bar{x}$ ):

Standard Deviation ( $s$ ):

Lower Bound:

Upper Bound:

Scientific Calculator

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## 11: Sample Size to Estimate a Population Mean

### Sample Size to Estimate a Population Mean

This calculator calculates the sample size needed to estimate a population mean. Please report the error to Dr. Jessica Kuang at [jkuangATvcccd.edu](mailto:jkuangATvcccd.edu).

To learn how to use this calculator, please watch a [short video](#) here.

#### Input

Fill in the population standard deviation ( $\sigma$ ), the error bound (E), and the confidence level (CL). Write the confidence level as a decimal. For example, for a 95% confidence level, enter 0.95 for CL. Then hit Calculate and assuming the population is normally distributed, the necessary sample size will be shown.

Standard Deviation ( $\sigma$ ):

Error Bound (E, enter a decimal):

Confidence Level (enter a decimal):

#### Output

Calculate

Sample Size (n):

Scientific Calculator

11: Sample Size to Estimate a Population Mean is shared under a [CC BY](#) license and was authored, remixed, and/or curated by LibreTexts.

## 12: Hypothesis Test for a Population Proportion

### Hypothesis Test for a Population Proportion

This calculator performs the hypothesis test for a population proportion given statistics. Please report the error to Dr. Jessica Kuang at [jkuangATvcccd.edu](mailto:jkuangATvcccd.edu).

To learn how to use this calculator, please watch a [short video](#) here.

#### Input

Fill in the sample size,  $n$ , the number of successes,  $x$ , the hypothesized population proportion  $p_0$ , and indicate if the test is left tailed,  $<$ , right tailed,  $>$ , or two tailed,  $\neq$ . Then hit "Calculate" and the test statistic and p-Value will be calculated for you.

Sample Size ( $n$ ):

Number of Success ( $x$ ):

Choose the test

- ☒  $<$   
☐  $>$   
☐  $\neq$

Hypothesized Population Proportion ( $p_0$ ):

Calculate

#### Output

Test Statistics ( $z$ )

p-value:

Scientific Calculator

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## 13: Hypothesis Test for a Population Mean Given Statistics

### Hypothesis Test for a Population Mean given Statistics

This calculator performs the hypothesis test for a population mean given statistics. Please report the error to Dr. Jessica Kuang at [jkuangATvcccd.edu](mailto:jkuangATvcccd.edu).

To learn how to use this calculator, please watch a [short video](#) here.

#### Input

Select if the population standard deviation,  $\sigma$ , is known or unknown. Then fill in the sample size ( $n$ ), the sample mean ( $\bar{x}$ ), the standard deviation ( $s$ ), the hypothesized population mean  $\mu_0$ , and indicate if the test is left tailed ( $<$ ), right tailed ( $>$ ), or two tailed ( $\neq$ ), then click Calculate.

Standard Deviation ( $s$ )

Sample Size ( $n$ ):

Sample Mean ( $\bar{x}$ ):

Choose the test

- ☒  $<$   
☐  $>$   
☐  $\neq$

Hypothesized Population Mean ( $\mu_0$ ):

Calculate

#### Output

Test Statistic ( $t$ )

p-value

Scientific Calculator

13: Hypothesis Test for a Population Mean Given Statistics is shared under a [CC BY](#) license and was authored, remixed, and/or curated by LibreTexts.

## 14: Hypothesis Test for a Population Mean Given Data

### Hypothesis Test for a Population Mean With Data

This calculator performs the hypothesis test for a population mean given statistics. Please report the error to Dr. Jessica Kuang at [jkuangATvcccd.edu](mailto:jkuangATvcccd.edu).

To learn how to use this calculator, please watch [a short video here \(coming up\)](#).

#### Input

Type in the values from the data set separated by commas, for example, 2,4,5,8,11,2. Then choose the left, right, or two-tailed test and the hypothesized mean. Finally hit Calculate and the sample mean, then the test statistic and the p-value will be shown.

Data:

Choose the test

- ☒  $<$   
☐  $>$   
☐  $\neq$

Hypothesized Population Mean ( $\mu_0$ ):

Calculate

#### Output

Sample Mean ( $\bar{x}$ ):

Standard Deviation ( $s$ ):

Test Statistics (t)

p-value:

Scientific Calculator

14: Hypothesis Test for a Population Mean Given Data is shared under a [CC BY](#) license and was authored, remixed, and/or curated by LibreTexts.

## 15: Two Independent Proportions Comparison

### Two Independent Proportions Comparison

This calculator performs the hypothesis test and also constructs a confidence interval for  $p_1 - p_2$  given statistics. Please report the error to Dr. Jessica Kuang at [jkuangATvcccd.edu](mailto:jkuangATvcccd.edu).

To learn how to use this calculator, please watch a [short video](#) here.

#### Input

Enter the sample size and the number of successes for each sample, choose the test, and enter the confidence level then hit Calculate. The test statistic, p-value, and the boundaries of the confidence interval will be shown. Be sure to enter the confidence level as a decimal, e.g., enter 95% as 0.95.

	Sample Size ( $N$ )	Number of Successes ( $X$ )
First Sample	<input type="text"/>	<input type="text"/>
	choose a test <input checked="" type="radio"/> $<$ <input type="radio"/> $>$ <input type="radio"/> $\neq$	
Second Sample	<input type="text"/>	<input type="text"/>

Confidence Level (enter a decimal):

Calculate

#### Output

Test Statistics ( $z$ ):

p-value:

Lower Bound:

Upper Bound:

Scientific Calculator

15: Two Independent Proportions Comparison is shared under a [CC BY](#) license and was authored, remixed, and/or curated by LibreTexts.

## 16: Two Independent Sample Means Comparison Given Statistics

### Two Independent Samples with statistics Calculator

This calculator performs the hypothesis test and also constructs a confidence interval for  $\mu_1 - \mu_2$  for two population means given statistics. Please report the error to Dr. Jessica Kuang at [jkuangATvcccd.edu](mailto:jkuangATvcccd.edu).

To learn how to use this calculator, please watch a [short video here \(coming up\)](#).

#### Input

Enter the statistics, the tail type, and the confidence level and hit Calculate and the test statistic, p-value, and the boundaries for the confidence interval. Be sure to enter the confidence level as a decimal, e.g., 95% should be entered as 0.95.

	Sample Size	Sample Mean	Sample Standard Deviation
First Sample	<input type="text"/>	<input type="text"/>	<input type="text"/>
	choose a test <input checked="" type="radio"/> < <input type="radio"/> > <input type="radio"/> $\neq$		
Second Sample	<input type="text"/>	<input type="text"/>	<input type="text"/>

Confidence Level (Enter a Decimal):

Calculate

#### Output

Test Statistics (t):	p-value:	Lower Bound:	Upper Bound:
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Scientific Calculator

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## 17: Two Independent Sample Means Comparison Given Data

### Two Independent Samples Means Comparison Given Data

This calculator performs the hypothesis test and also constructs a confidence interval for  $\mu_1 - \mu_2$  given data. Please report the error to Dr. Jessica Kuang at [jkuangATvcccd.edu](mailto:jkuangATvcccd.edu).

To learn how to use this calculator, please watch a [short video here \(coming up\)](#).

#### Input

Type in the values from the two data sets separated by commas, for example, 2,4,5,8,11,2. Enter the statistics, the tail type, and the confidence level then hit Calculate. The test statistic, p-value, and the boundaries for the confidence interval. Be sure to enter the confidence level as a decimal, e.g., 95% should be entered as 0.95.

Data

choose a test

- ☒ <  
☐ >  
☐  $\neq$

Data

Confidence Level (enter a decimal):

0.95

Calculate

#### Output

Test Statistics (t):

p-value

Lower bound

Upper Bound

Scientific Calculator

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## 18: Two Dependent Sample Means Comparison Given Data

### Two dependent Samples Means Comparison Given data

This calculator performs a hypothesis test and creates a confidence interval for two dependent sample means given the data sets. Please report the error to Dr. Jessica Kuang at [jkuangATvcccd.edu](mailto:jkuangATvcccd.edu).

To learn how to use this calculator, please [watch a short video here \(coming up\)](#).

#### Input

Type in the values from the two data sets separated by commas, for example, 2,4,5,8,11,2. Then enter the tail type and the confidence level and hit Calculate and the test statistic, t, the p-value, p, the confidence interval's lower bound, LB, the upper bound, UB, and the data set of the differences will be shown. Be sure to enter the confidence level as a decimal, e.g., 95% has a CL of 0.95.

Data1:

choose a test

- ☒ <  
☐ >  
☐ ≠

Data2:

Confidence Level (enter a decimal):

0.95

Calculate

#### Output

Test Statistics (t):

p-value:

Lower Bound:

Upper Bound:

Scientific Calculator

18: Two Dependent Sample Means Comparison Given Data is shared under a [CC BY](#) license and was authored, remixed, and/or curated by LibreTexts.

## 19: Chi-Square Test for Goodness of Fit

### Chi-Square Test for Goodness of Fit

This calculator performs the Chi-Square test for goodness of fit. Please report the error to Dr. Jessica Kuang at [jkuangATvcccd.edu](mailto:jkuangATvcccd.edu).

To learn how to use this calculator, please watch a short video [here](#).

#### Input

Type in the values from the observed and expected sets separated by commas, for example, 2,4,5,8,11,2. Then hit Calculate, the test statistic and the p-value will be shown.

Observed:

Expected:

#### Output

Calculate

Test Statistics ( $\chi^2$ ):

p-value:

Scientific Calculator

19: Chi-Square Test for Goodness of Fit is shared under a [CC BY](#) license and was authored, remixed, and/or curated by LibreTexts.

## 20: Chi-Square Test for Independence

### Under Reconstruction $\chi^2$ test for independence calculator

Enter in the observed values and hit Calculate and the  $\chi^2$  test statistic and the p-value will be calculated for you. Leave blank the last rows and columns that don't have data values.

	A	B	C	D
First	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Second	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Third	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Fourth	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Fifth	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Sixth	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Seventh	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Eighth	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Ninth	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Tenth	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Calculate

$\chi^2$ :

p

Scientific Calculator

[Back to the Calculator Menu](#)

20: Chi-Square Test for Independence is shared under a [CC BY](#) license and was authored, remixed, and/or curated by LibreTexts.

## 21: One-Way ANOVA

### One-Way ANOVA

This calculator performs the one-way ANOVA. Please report the error to Dr. Jessica Kuang at [jkuangATvcccd.edu](mailto:jkuangATvcccd.edu).

To learn how to use this calculator, please watch a short video here (coming up).

#### Input

Enter the data values separated by commas, for example: 3,4,7,9,-2,8. Then hit Calculate and the F-statistic and the p-value will be generated for you. Leave the extra rows blank if not needed.

Data1:

Data2:

Data3:

Data4:

Data5:

Data6:

Data7:

Data8:

Calculate

Test Statistics (F):

p-value:

Scientific Calculator

21: One-Way ANOVA is shared under a [CC BY](https://creativecommons.org/licenses/by/4.0/) license and was authored, remixed, and/or curated by LibreTexts.

## 22: Graveyard

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This is my graveyard, please don't use any calculators beyond this point.

~Jessica Kuang

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## 22.1: Mean and Standard Deviation for Grouped Frequency Tables Calculator

### Mean and Standard Deviation for grouped frequency Tables Calculator

Type in the midpoints and frequencies below. Put the midpoints in increasing order and do not include any values with zero frequency.

Midpoints

Frequencies

- ☐ Population Standard Deviation  
☐ Sample Standard Deviation

**Mean**

**Standard Deviation**

**Five Point Summary**

**Sample Size**

Calculate

Scientific Calculator

[Back to the Calculator Menu](#)

This page titled [22.1: Mean and Standard Deviation for Grouped Frequency Tables Calculator](#) is shared under a [CC BY](#) license and was authored, remixed, and/or curated by [Larry Green](#).

## 22.2: Binomial Distribution Calculator

### Binomial Distribution calculator

Enter the lower bound for the number of successes (Low), the upper bound for the number of successes (High), the number of trials (Trials), and the probability of success (P), and then hit Calculate.

Low:

High:

Trials:

P:

Calculate

Scientific Calculator

[Back to the Calculator Menu](#)

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## 22.3: One Variable Statistics Calculator

### One Variable statistics Calculator

Type in the values from the data set separated by commas, for example, 2,4,5,8,11,2, and click Calculate.

- ☐ Population Standard Deviation  
☐ Sample Standard Deviation

Calculate

Mean

Minimum

Q1

Median

Q3

Maximum

Standard Deviation

Variance

IQR

Sample Size

Scientific Calculator

[Back to the Calculator Menu](#)

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## 22.4: Normal Probability Calculator

### Online Normal Probability Calculator

Fill in all of the values except one below and hit Calculate then the last value will be given to you.

Low:	High:	Mean:	Std. Dev.:	p=
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Calculate

Scientific Calculator

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## 22.5: Hypothesis Test for a Population Mean With Data Calculator

### Hypothesis Test for a Population Mean With Data Calculator

Type in the values from the data set separated by commas, for example, 2,4,5,8,11,2. Then type in the population standard deviation  $\sigma$  if it is known or leave it blank if it is not known. Then choose a left, right or two tailed test, and the hypothesized mean. Finally hit Calculate and the sample mean, the test statistic and the p-value will be shown.

Data:

$\sigma$ :	<input type="radio"/> < <input type="radio"/> > <input type="radio"/> $\neq$	$\mu_0$ :	<input type="button" value="Calculate"/>
<input type="text"/>		<input type="text"/>	

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## 22.6: Hypothesis Test and Confidence Interval Calculator for Two Dependent Samples

### Two dependent Samples with data Calculator

Type in the values from the two data sets separated by commas, for example, 2,4,5,8,11,2. Then enter the tail type and the confidence level and hit Calculate and the test statistic,  $t$ , the  $p$ -value,  $p$ , the confidence interval's lower bound, LB, the upper bound, UB, and the data set of the differences will be shown. Be sure to enter the confidence level as a decimal, e.g., 95% has a CL of 0.95.

Data1:

Data2:

☒ <

☐ >

☐  $\neq$

CL:

Calculate

t:

p

LB

UB

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## 22.7: Full Regression Analysis Calculator

### Full regression analysis Calculator

Create a scatter plot, the regression equation,  $r$  and  $r^2$ , and perform the hypothesis test for a nonzero correlation below by entering a point, click Plot Points and then continue until you are done. You can also input all your data at once by putting the first variable's data separated by commas in the first row and the second variable's data separated by commas in the second row and then clicking on plot points.



,

Plot Points

New Plot

x:

y:

Regression Equation: <input type="text"/>	r: <input type="text"/>	$r^2$ : <input type="text"/>
<input checked="" type="radio"/> Hypothesis: $H_0 : \rho = 0, H_a : \rho \neq 0$ <input type="radio"/> Hypothesis: $H_0 : \rho = 0, H_a : \rho < 0$ <input type="radio"/> Hypothesis: $H_0 : \rho = 0, H_a : \rho > 0$		p-value = <input type="text"/>
		t = <input type="text"/>

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## 22.8: Sample Size for a Mean Calculator

### Sample size Calculator

Fill in the population standard deviation ( $\sigma$ ), the error bound (E), and the confidence level (CL). Write the confidence level as a decimal. For example, for a 95% confidence level, enter 0.95 for CL. Then hit Calculate and assuming the population is normally distributed, the necessary sample size will be shown.

$\sigma$ :	E:	CL:	Calculate n	n:
<input type="text"/>	<input type="text"/>	<input type="text"/>		<input type="text"/>

Scientific Calculator

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## 22.9: Needed Sample Size for a Confidence Interval for a Population Proportion Calculator

### Sample Size Calculator

Fill in the error bound (E) and the confidence level (CL) written as a decimal, for example a 95% confidence level is 0.95. If there is an estimate for the population proportion, check the "Have Estimate for p" radio button and then fill in the estimate in the p box that appears. Then hit "Calculate n" and the needed sample size will be calculated for you.

☒ No

Estimate for p

☐ Have

Estimate for p

Estimate for p:

E:

CL:

Calculate

n

n:

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Estimate for p:

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## 22.10: Two Independent Samples With Data Hypothesis Test and Confidence Interval Calculator

### Two Independent Samples with data Calculator

Type in the values from the two data sets separated by commas, for example, 2,4,5,8,11,2. Then enter the tail type and the confidence level and hit Calculate and the test statistic,  $t$ , the p-value,  $p$ , the confidence interval's lower bound, LB, and the upper bound, UB will be shown. Be sure to enter the confidence level as a decimal, e.g., 95% has a CL of 0.95.

Data1:

Data2:

- ☒ <  
☐ >  
☐  $\neq$

CL:

Calculate

t:

p

LB

UB

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## 22.11: Hypothesis Test and Confidence Interval Calculator for Two Dependent Samples

### Two dependent Samples with data Calculator

Type in the values from the two data sets separated by commas, for example, 2,4,5,8,11,2. Then enter the tail type and the confidence level and hit Calculate and the test statistic,  $t$ , the  $p$ -value,  $p$ , the confidence interval's lower bound, LB, the upper bound, UB, and the data set of the differences will be shown. Be sure to enter the confidence level as a decimal, e.g., 95% has a CL of 0.95.

Data1:

Data2:

- ☒ <  
☐ >  
☐  $\neq$

CL:

Calculate

t:

p

LB

UB

Scientific Calculator

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## 22.12: Chi-Square Goodness of Fit Test Calculator

### $\chi^2$ Goodness of fit Calculator

Type in the values from the observed and expected sets separated by commas, for example, 2,4,5,8,11,2. Then hit Calculate and the test statistic,  $\chi^2$ , and the p-value, p, will be shown.

Observed:

Expected:

Calculate

$\chi^2$ :

p

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## 22.13: Chi-Square Test For Homogeneity Calculator

### $\chi^2$ test for Homogeneity calculator

Enter in the observed values for each of the two samples A and B and hit Calculate and the  $\chi^2$  test statistic and the p-value will be calculated for you. Leave blank the last rows that don't have data values.

A	B
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>

Calculate

$\chi^2$ :

p

Scientific Calculator

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## 22.14: Chi-Square Test For Independence Calculator

### $\chi^2$ test for independence calculator

Enter in the observed values and hit Calculate and the  $\chi^2$  test statistic and the p-value will be calculated for you. Leave blank the last rows and columns that don't have data values.

	A	B	C	D
First	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Second	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Third	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Fourth	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Fifth	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Sixth	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Seventh	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Eighth	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Ninth	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Tenth	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Calculate

$\chi^2$ :

p

Scientific Calculator

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## 22.15: ANOVA Calculator

### ANOVA Calculator

Enter the data values separated by commas, for example: 3,4,7,9,-2,8. Then hit Calculate and the F-statistic and the p-value will be generated for you.

Data1:

Data2:

Data3:

Data4:

Data5:

Data6:

Data7:

Data8:

Calculate

F:

p

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## 22.16: Hypothesis Test and Confidence Interval Calculator- Difference Between Population Proportions

### Two Proportions Calculator

Enter in the sample sizes and number of successes for each sample, the tail type and the confidence level and hit Calculate and the test statistic,  $t$ , the  $p$ -value,  $p$ , the confidence interval's lower bound, LB, and the upper bound, UB will be shown. Be sure to enter the confidence level as a decimal, e.g., 95% has a CL of 0.95.

	Sample Size	Number of Successes
First Sample	<input type="text"/>	<input type="text"/>
Second Sample	<input type="text"/>	<input type="text"/>

<input checked="" type="radio"/>	<
<input type="radio"/>	>
<input type="radio"/>	$\neq$

CL:

Calculate

$z$ :

$p$ :

LB:

UB:

Scientific Calculator

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## 22.18: Glossary

**Sample Word 1** | Sample Definition 1

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## 22.1: Mean and Standard Deviation for Grouped Frequency Tables Calculator

### Mean and Standard Deviation for grouped frequency Tables Calculator

Type in the midpoints and frequencies below. Put the midpoints in increasing order and do not include any values with zero frequency.

Midpoints

Frequencies

- ☐ Population Standard Deviation  
☐ Sample Standard Deviation

**Mean**

**Standard Deviation**

**Five Point Summary**

**Sample Size**

Calculate

Scientific Calculator

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## 22.2: Binomial Distribution Calculator

### Binomial Distribution calculator

Enter the lower bound for the number of successes (Low), the upper bound for the number of successes (High), the number of trials (Trials), and the probability of success (P), and then hit Calculate.

Low:

High:

Trials:

P:

Calculate

Scientific Calculator

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## 22.3: One Variable Statistics Calculator

### One Variable statistics Calculator

Type in the values from the data set separated by commas, for example, 2,4,5,8,11,2, and click Calculate.

- ☐ Population Standard Deviation  
☐ Sample Standard Deviation

Calculate

Mean

Minimum

Q1

Median

Q3

Maximum

Standard Deviation

Variance

IQR

Sample Size

Scientific Calculator

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## 22.4: Normal Probability Calculator

### Online Normal Probability Calculator

Fill in all of the values except one below and hit Calculate then the last value will be given to you.

Low:	High:	Mean:	Std. Dev.:	p=
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Calculate

Scientific Calculator

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## 22.5: Hypothesis Test for a Population Mean With Data Calculator

### Hypothesis Test for a Population Mean With Data Calculator

Type in the values from the data set separated by commas, for example, 2,4,5,8,11,2. Then type in the population standard deviation  $\sigma$  if it is known or leave it blank if it is not known. Then choose a left, right or two tailed test, and the hypothesized mean. Finally hit Calculate and the sample mean, the test statistic and the p-value will be shown.

Data:

$\sigma$ :	<input type="radio"/> < <input type="radio"/> > <input type="radio"/> $\neq$	$\mu_0$ :	<input type="button" value="Calculate"/>
<input type="text"/>		<input type="text"/>	

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## 22.6: Hypothesis Test and Confidence Interval Calculator for Two Dependent Samples

### Two dependent Samples with data Calculator

Type in the values from the two data sets separated by commas, for example, 2,4,5,8,11,2. Then enter the tail type and the confidence level and hit Calculate and the test statistic,  $t$ , the  $p$ -value,  $p$ , the confidence interval's lower bound, LB, the upper bound, UB, and the data set of the differences will be shown. Be sure to enter the confidence level as a decimal, e.g., 95% has a CL of 0.95.

Data1:

Data2:

☒ <

☐ >

☐  $\neq$

CL:

Calculate

t:

p

LB

UB

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## 22.7: Full Regression Analysis Calculator

### Full regression analysis Calculator

Create a scatter plot, the regression equation,  $r$  and  $r^2$ , and perform the hypothesis test for a nonzero correlation below by entering a point, click Plot Points and then continue until you are done. You can also input all your data at once by putting the first variable's data separated by commas in the first row and the second variable's data separated by commas in the second row and then clicking on plot points.



Plot Points

New Plot

x:

y:

Regression Equation: <input type="text"/>	r: <input type="text"/>	$r^2$ : <input type="text"/>
<input checked="" type="radio"/> Hypothesis: $H_0 : \rho = 0, H_a : \rho \neq 0$ <input type="radio"/> Hypothesis: $H_0 : \rho = 0, H_a : \rho < 0$ <input type="radio"/> Hypothesis: $H_0 : \rho = 0, H_a : \rho > 0$		t = <input type="text"/>

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## 22.8: Sample Size for a Mean Calculator

### Sample size Calculator

Fill in the population standard deviation ( $\sigma$ ), the error bound (E), and the confidence level (CL). Write the confidence level as a decimal. For example, for a 95% confidence level, enter 0.95 for CL. Then hit Calculate and assuming the population is normally distributed, the necessary sample size will be shown.

$\sigma$ :	E:	CL:	Calculate n	n:
<input type="text"/>	<input type="text"/>	<input type="text"/>		<input type="text"/>

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## 22.9: Needed Sample Size for a Confidence Interval for a Population Proportion Calculator

### Sample Size Calculator

Fill in the error bound (E) and the confidence level (CL) written as a decimal, for example a 95% confidence level is 0.95. If there is an estimate for the population proportion, check the "Have Estimate for p" radio button and then fill in the estimate in the p box that appears. Then hit "Calculate n" and the needed sample size will be calculated for you.

☒ No

Estimate for p

☐ Have

Estimate for p

Estimate for p:

E:

CL:

Calculate

n

n:

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Estimate for p:

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## 22.10: Two Independent Samples With Data Hypothesis Test and Confidence Interval Calculator

### Two Independent Samples with data Calculator

Type in the values from the two data sets separated by commas, for example, 2,4,5,8,11,2. Then enter the tail type and the confidence level and hit Calculate and the test statistic,  $t$ , the p-value,  $p$ , the confidence interval's lower bound, LB, and the upper bound, UB will be shown. Be sure to enter the confidence level as a decimal, e.g., 95% has a CL of 0.95.

Data1:

Data2:

- ☒ <  
☐ >  
☐  $\neq$

CL:

Calculate

t:

p

LB

UB

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## 22.11: Hypothesis Test and Confidence Interval Calculator for Two Dependent Samples

### Two dependent Samples with data Calculator

Type in the values from the two data sets separated by commas, for example, 2,4,5,8,11,2. Then enter the tail type and the confidence level and hit Calculate and the test statistic,  $t$ , the  $p$ -value,  $p$ , the confidence interval's lower bound, LB, the upper bound, UB, and the data set of the differences will be shown. Be sure to enter the confidence level as a decimal, e.g., 95% has a CL of 0.95.

Data1:

Data2:

- ☒ <  
☐ >  
☐  $\neq$

CL:

Calculate

t:

p

LB

UB

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## 22.12: Chi-Square Goodness of Fit Test Calculator

### $\chi^2$ Goodness of fit Calculator

Type in the values from the observed and expected sets separated by commas, for example, 2,4,5,8,11,2. Then hit Calculate and the test statistic,  $\chi^2$ , and the p-value, p, will be shown.

Observed:

Expected:

Calculate

$\chi^2$ :

p

Scientific Calculator

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## 22.13: Chi-Square Test For Homogeneity Calculator

### $\chi^2$ test for Homogeneity calculator

Enter in the observed values for each of the two samples A and B and hit Calculate and the  $\chi^2$  test statistic and the p-value will be calculated for you. Leave blank the last rows that don't have data values.

A	B
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>

Calculate

$\chi^2$ :

p

Scientific Calculator

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## 22.14: Chi-Square Test For Independence Calculator

### $\chi^2$ test for independence calculator

Enter in the observed values and hit Calculate and the  $\chi^2$  test statistic and the p-value will be calculated for you. Leave blank the last rows and columns that don't have data values.

	A	B	C	D
First	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Second	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Third	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Fourth	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Fifth	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Sixth	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Seventh	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Eighth	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Ninth	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Tenth	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Calculate

$\chi^2$ :

p

Scientific Calculator

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## 22.15: ANOVA Calculator

### ANOVA Calculator

Enter the data values separated by commas, for example: 3,4,7,9,-2,8. Then hit Calculate and the F-statistic and the p-value will be generated for you.

Data1:

Data2:

Data3:

Data4:

Data5:

Data6:

Data7:

Data8:

Calculate

F:

p

Scientific Calculator

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## 22.16: Hypothesis Test and Confidence Interval Calculator- Difference Between Population Proportions

### Two Proportions Calculator

Enter in the sample sizes and number of successes for each sample, the tail type and the confidence level and hit Calculate and the test statistic,  $t$ , the  $p$ -value,  $p$ , the confidence interval's lower bound, LB, and the upper bound, UB will be shown. Be sure to enter the confidence level as a decimal, e.g., 95% has a CL of 0.95.

	Sample Size	Number of Successes
First Sample	<input type="text"/>	<input type="text"/>
Second Sample	<input type="text"/>	<input type="text"/>

<input checked="" type="radio"/>	<
<input type="radio"/>	>
<input type="radio"/>	$\neq$

CL:

Calculate

$z$ :

$p$ :

LB:

UB:

Scientific Calculator

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## 22.17: Index

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## 22.18: Glossary

**Sample Word 1** | Sample Definition 1

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