# How can I use the GAMMA.DIST function in Google Sheets?

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June 30, 2024

The GAMMA.DIST function in Google Sheets is a statistical function that allows users to calculate the gamma distribution for a given set of data. This function can be used to determine the probability of a specific value occurring within a range of values, as well as to analyze and compare data sets. To use the GAMMA.DIST function, users must input the necessary parameters, such as the value, alpha, and beta, and the function will return the corresponding result. This function is particularly useful in financial and scientific analysis, as well as for creating charts and graphs. With its ease of use and accuracy, the GAMMA.DIST function is a valuable tool for analyzing data in Google Sheets.

## GAMMA.DIST

The GAMMA.DIST function calculates the gamma distribution, a 2-parameter continuous probability distribution.

### Sample Usage

```
GAMMA.DIST(4.79, 1.234, 7, TRUE)
```

```
GAMMA.DIST(A1, B1, C1, FALSE)
```

### Syntax

```
GAMMA.DIST(x, alpha, beta, cumulative)
```

`x` - The input to the gamma probability distribution function. The value at which to evaluate the function.

`alpha` - The shape of gamma distribution.

`beta` - The scale of the distribution.

`cumulative` - Logical value that determines the form of the function.

If `TRUE: GAMMA.DIST` returns the left-tailed cumulative distribution function.

If `FALSE: GAMMA.DIST` returns the probability density function.

### Notes

`x`, `alpha`, and `beta` must be numeric.

`alpha` and `beta` must be greater than zero.

If `alpha` is less than or equal to `1` and `cumulative` is `FALSE`, then `x` must be greater than zero; otherwise, `x` must be greater than or equal to zero.

`GAMMA.DIST` is synonymous with `GAMMADIST`.

The chi-squared distribution is a special case of the gamma distribution. For an integer `n > 0`, `GAMMA.DIST(x, n/2, 2, cumulative)` is equivalent to `CHISQ.DIST(x, n, cumulative)`.

## See Also

`CHISQ.DIST`: Calculates the left-tailed chi-squared distribution, often used in hypothesis testing.

`GAMMADIST`: Calculates the gamma distribution, a two-parameter continuous probability distribution.

## Example

Evaluate the probability density function of the gamma distribution at `x = 5` with `alpha = 3.14` and `beta = 2`.

| | A | B | C | D |
|---|---|---|---|---|
| **1** | **x** | **alpha** | **beta** | **solution** |
| **2** | 5 | 3.14 | 2 | 0.1276550316 |
| **4** | 5 | 3.14 | 2 | =GAMMA.DIST(5, 3.14, 2, FALSE) |
| **5** | 5 | 3.14 | 2 | =GAMMA.DIST(A2, B2, C2, FALSE) |