

# What is the method for finding the Z critical value using Python?

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The method for finding the Z critical value using Python involves using the "norm.ppf" function from the "scipy.stats" library. This function takes in the desired level of significance, also known as the alpha value, and returns the corresponding Z critical value. This value can then be used in various statistical calculations and hypothesis testing to determine the critical region and make decisions about the null hypothesis. Using Python for this method allows for quick and accurate computation of the Z critical value, making it a convenient tool for statistical analysis.

## Find the Z Critical Value in Python

**Whenever you conduct a hypothesis test, you will get a test statistic as a result. To determine if the results of the hypothesis test are statistically significant, you can compare the test statistic to a Z critical value. If the absolute value of the test statistic is greater than the Z critical value, then the results of the test are statistically significant.**

**To find the Z critical value in Python, you can use the , which uses the following syntax:**

```
scipy.stats.norm.ppf(q)
```

**where:**

**q: The significance level to use**

**The following examples illustrate how to find the Z critical value for a left-tailed test, right-tailed test, and a**

## two-tailed test.

### Left-tailed test

Suppose we want to find the Z critical value for a left-tailed test with a significance level of .05:

```
import scipy.stats

#find Z critical value
scipy.stats.norm.ppf(.05)

-1.64485
```

The Z critical value is -1.64485. Thus, if the test statistic is less than this value, the results of the test are statistically significant.

### Right-tailed test

Suppose we want to find the Z critical value for a right-tailed test with a significance level of .05:

```
import scipy.stats

#find Z critical value
scipy.stats.norm.ppf(1-.05)
```

**1.64485**

The Z critical value is 1.64485. Thus, if the test statistic is greater than this value, the results of the test are statistically significant.

Two-tailed test

Suppose we want to find the Z critical value for a two-tailed test with a significance level of .05:

```
import scipy.stats
```

```
#find Z critical value
```

```
scipy.stats.norm.ppf(1-.05/2)
```

**1.95996**

*Refer to the for the exact details of the norm.ppf() function.*

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