Command	Explanation	Notes
`ss.norm.cdf(x)`	$\Pr(Z \leq x)$	import scipy.stats as ss
`ss.t.cdf(x, n-1)`	$\Pr(T_{n-1} \leq x)$	import scipy.stats as ss
`ss.chi2.cdf(x, n-1)`	$\Pr(\chi^2_{n-1} \leq x)$	import scipy.stats as ss
`ss.chi2.cdf(x, n-1)`	$\Pr(\chi^2_{n-1} \leq x)$	import scipy.stats as ss
`ss.f.cdf(x, v1, v2)`	$\Pr(F_{v_1,v_2} \leq x)$	import scipy.stats as ss
`ss.norm.ppf(p)`	gives x s.t. $\Pr(Z \leq x) = p$	import scipy.stats as ss
`ss.t.ppf(p, n-1)`	gives x s.t. $\Pr(T_{n-1} \leq x) = p$	import scipy.stats as ss
`ss.chi2.ppf(p, n-1)`	gives x s.t. $\Pr(\chi^2_{n-1} \leq x) = p$	import scipy.stats as ss
`ss.f.ppf(p, v1, v2)`	gives x s.t. $\Pr(F_{v_1,v_2} \leq x) = p$	import scipy.stats as ss
`ss.levene(x,y)`	Levene test for equal variances	import scipy.stats as ss
`ss.test_ind(x,y,equal_var)`	difference in means test	import scipy.stats as ss

Distributions

Use `cdf` functions to find p-values and `ppf` functions to find critical values.

What is the probability of drawing a number from a T_{16} distribution that is less than or equal to 2? The command `ss.t.cdf(2, 16)` gives 0.9686.

Below what number does 90 percent of the T_{16} distribution fall below? The command `ss.t.ppf(0.90, 16)` gives 1.3368.

Difference in Means and Variances

I will import `https://www.wimivo.com/data.csv` into Python.

```
import pandas as pd
df = pd.read_csv(r'https://www.wimivo.com/data.csv')
```

I'll test for equality of variances after importing "scipy.stats" as `ss`.

```
import scipy.stats as ss
varTest = ss.levene(df["var1"],df["var2"])
print(varTest)
```

The p-value is 0.077, so I do not reject the null hypothesis of equal variances.

Having concluded that the two variances are equal, I'll do a difference in means test with `equal_var=True`.

```
ttest = ss.ttest_ind(df["var1"],df["var2"], equal_var=True)
print(ttest)
```

The p-value is 0.55, so I do not reject the null hypothesis of equal means.