

TOPIC: TWO VARIANCES – TI-84

Hypothesis Tests for Two Variances Using a TI-84

◆ To perform a hypothesis test for two variances using a calculator, use the **2-SampFTest** function.

EXAMPLE

Do a Hyp. Test to see if there's evidence for $\sigma_1 > \sigma_2$ using $\alpha = 0.05$ in the following scenarios:

(A) $s_{x_1} = 5.72$, $n_1 = 150$ $s_{x_2} = 4.91$, $n_2 = 175$

H_0 : _____ H_a : _____ P -value: _____

Because P -value [$<$ | $>$] α , we [**REJECT** | **FAIL TO REJECT**] H_0 .

There is [**ENOUGH** | **NOT ENOUGH**] evidence to suggest...

(B)

Sample Data						
Sample 1:	25.3	13.85	19.1	22.68	16.7	24.59
Sample 2:	13.2	12.4	15.6	12.98	19.9	20.11

H_0 : _____ H_a : _____ P -value: _____

Because P -value [$<$ | $>$] α , we [**REJECT** | **FAIL TO REJECT**] H_0 .

There is [**ENOUGH** | **NOT ENOUGH**] evidence to suggest...



HOW TO: Hyp Test on TI-84 2 Variances

1) If given data, enter in **L1**, **L2**

(**STAT** , **1:EDIT...**)

2) (**STAT**) **>** **TESTS**

E: 2-SampFTest

3) If given data: If given $s_1, n_1, \dots$:

DATA

List1: L1

List2: L2

Freq1: 1

Freq2: 1

STATS

Sx1:

n1:

Sx2:

n2:

σ_1 : $\neq \sigma_2$ $< \sigma_2$ $> \sigma_2$

Calculate **Draw**

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PRACTICE

A historian is comparing the variation in weights of rare coins from different time periods. The data from two independent random samples is shown below. Using a 0.05 significance level and a graphing calculator, test the claim that the variation of weights before the 1900s is greater than after the 1900s.

H_0 : _____ H_a : _____ P -value: _____

Because P -value [< | >] α , we [**REJECT** | **FAIL TO REJECT**] H_0 .

There is [**ENOUGH** | **NOT ENOUGH**] evidence to suggest...



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Sx1:

n1:

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n2:

σ_1 : $\neq \sigma_2$ $< \sigma_2$ $> \sigma_2$

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EXAMPLE

A logistics manager is studying variation in delivery times (in minutes) between new and experienced drivers. Two independent random samples were taken, shown below. Use $\alpha = 0.05$ to test the claim that the variation in delivery times of new drivers is greater than for experienced drivers.

Delivery Times: New vs. Experienced											
New:	95	66	72	58	94	62	58	79	91	96	68
Experienced:	58	54	53	68	52	61	59	74			

H_0 : _____ H_a : _____ P -value: _____

Because P -value [< | >] α , we [REJECT | FAIL TO REJECT] H_0 .

There is [ENOUGH | NOT ENOUGH] evidence to suggest...

 **HOW TO: Hyp Test on TI-84
2 Variances**

- If given data, enter in **L1**, **L2**
(**STAT** , **1:EDIT...**)
- (**STAT**) > **TESTS**
E: 2-SampFTest
- If given data: If given $s_1, n_1, \dots$:

DATA	STATS
List1: L1	Sx1:
List2: L2	n1:
Freq1: 1	Sx2:
Freq2: 1	n2:

σ_1 : $\neq \sigma_2$ $< \sigma_2$ $> \sigma_2$

Calculate **Draw**