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20. One-sample t test for a mean on HP Prime

You can use the HP Prime to perform a one-sample t test using either raw data or summary statistics. Let's use HP Prime to carry out the test of $H_0: \mu = 5$ versus $H_a: \mu > 5$ from the dissolved oxygen example.

1. Enter the data in the Statistics 1Var App and then import into the Inference App.

- Open the Statistics 1Var app and enter the 15 dissolved oxygen readings in list D1

	D1	D2	D3	D4
1	4.53			
2	5.04			
3	3.29			
4	5.23			
5	4.13			
6	5.5			
7	4.83			
8	4.4			
9	5.42			
10	6.38			
	4.53			

- Open the Inference app and select Significance Test and T-Test: 1μ . For the alternative hypothesis H_a , select $\mu < \mu_0$.

Method: Hypothesis test
 Type: T-Test: 1μ
 Alt Hypoth: $\mu < \mu_0$

Choose the alternative hypothesis
 Choose

- Press **Num** for Numeric view. Tap **Import**. In the **App** field, select *Statistics 1Var*; in the **Column** field, select *D1*. Tap **OK**.

Import Sample Statistics

\bar{x} : 4.7713333333
 n: 15
 s: 0.93959616452

App: Statistics 1Var
 Column: D1

Choose column to import
 Choose Cancel OK

- The values of \bar{x} , s, and n shown above will be pasted into the Inference app Numeric view.

2. Complete the test.

- Enter $\mu_0 = 5$ and $\alpha = 0.05$

Inference Numeric View

\bar{x} : 4.7713333333
 s: 0.93959616452
 n: 15
 μ_0 : 5
 α : 0.05

Significance level
 Edit Import Calc

- Tap **Calc** to see the results numerically

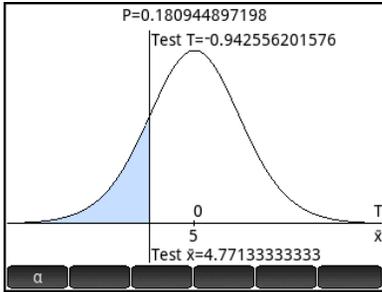
Result	1
Test T	-0.942556201576
Test \bar{x}	4.77133333333
P	0.180944897198
DF	14
Crit. T	-1.76131013578
Crit. \bar{x}	4.57270142932

Fail to reject H_0 at $\alpha=0.05$
 More OK

- Tap **OK** to return to Numeric view

3. You can also view the results graphically.

- Press  to see the Plot view. The test probability is shown at the top, with the test t and \bar{x} values.



- Tap  for an alternate view of the test results

Here, the area associated with the alternative hypothesis and α -level is shown shaded in blue. The

test t and \bar{x} values are shown as well. The test values are clearly not in the shaded reject region. Press  and  to increase and decrease the α -level.

