

TECHNOLOGY CORNER for Section 9.3, Page 582

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

Statistics 1Var Numeric View				
	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			
11	4.53			
12				
13				
14				
15				

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

Inference Symbolic View	
Method:	Hypothesis test
Type:	T-Test: 1 μ
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

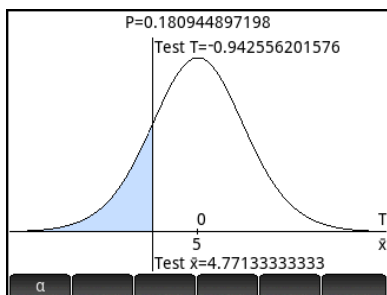
- Tap **Calc** to see the results numerically


Results	
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.

