

TECHNOLOGY CORNER for Section 12.1, Page 751

28. Confidence interval for slope with HP Prime

Let's use the data from the previous example to construct a confidence interval for the slope of a population (true) regression line on HP Prime.

1. Set up the confidence interval.

- Press **Apps** and tap the *Statistics 2Var* app icon
- Enter the x-values (miles driven) in C1 and the y-values (price in dollars) in C2. The data can be found on Page 750.

	C1	C2	C3	C4
1	70.583	21.994		
2	129.484	9.500		
3	29.932	29.875		
4	29.953	41.995		
5	24.495	41.995		
6	75.678	28.986		
7	8.359	31.891		
8	4.447	37.991		
9	34.077	34.995		
10	58.023	29.988		
Σ	70.583			

- Press **Apps** and tap the *Inference* app icon.
- Tap the **Method** field and choose Regression. Tap the **Type** field and choose Interval: Slope.

Inference Symbolic View	
Method:	Regression
Type:	Interval: Slope
Choose a test or interval	
Choose	

1. Enter the data.

- Press **Num** for Numeric view. With the cursor in the XList column, tap **Import**
- Tap the **App** field and choose *Statistics 2Var*. Tap the **Column** field and choose C1 then tap **OK**.

Import Sample Statistics	
App:	Statistics 2Var
Column:	C1
Choose column to import	
Choose	Cancel OK

- Select Ylist and tap **import**
- Tap the **App** field and choose *Statistics 2Var*. Tap the **Column** field and choose C2 then tap **OK**.

3. Enter the C-value and view the results.



- Tap **Calc** and enter 0.9 in the **C** field as the confidence level

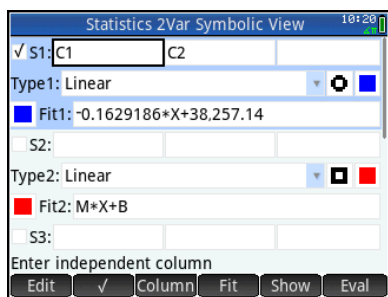
Inference Numeric View	
C:	0.9
Confidence Level	
Edit	Cancel OK


- Tap **OK** to see the results of the confidence interval for slope shown below.



Results	
C	0.9
Crit. T	1.76131013578
DF	14
b ₁	-0.162918553062
seSlope	3.09564249186E-2
Lower	-0.217442418039
Upper	-0.108394688085
0.9	
More	OK

The results include the required confidence interval for the slope (-0.217442, -0.1083947) as well as the value of b_1 and the standard error about the slope.

4. To see the regression line equation, press  and select *Statistics 2Var* and press .





- Similarly, to calculate the confidence interval for the intercept, press  and select *Inference*.

- Tap the **Method** field and choose Regression. Tap the **Type** field and choose **Interval: Intercept**.
- Press  and tap .

Results	
C	0.9
Crit. T	1.76131013578
DF	14
b_0	38,257.1350657
seInt	2,445.81333234
Lower	33,949.2992532
Upper	42,564.9708782

0.9

 More 

The results include the confidence interval for the intercept (33949.30, 42564.97). The value of b_0 as well as the standard error about the intercept are included as well.

Note that the Inference app can also calculate confidence intervals for the mean response and a prediction interval for a future value. The significance t-Test for linear regression is covered in the next HP Prime Technology Corner.