

TECHNOLOGY CORNER

29. Significance test for slope on the HP Prime



Let's use the data from the crying and IQ study to perform a significance test for the slope of the population regression line on the HP Prime.

- Press **Apps** and tap the *Inference* app icon. The app opens in Symbolic view.
- Tap the **Method** field and choose Regression. Tap the **Type** field and choose Linear t test. Tap the **Alt Hypoth** field and select $\beta_1 > 0$.

- Press **Num** to enter Numeric view. To delete existing data, press **Shift** **Esc**.

- Enter the crycounts in XList and the IQ data in YList. The data can be found on Page 754.

	Xlist	Ylist
30	12	94
31	12	103
32	14	106
33	10	109
34	23	113
35	9	119
36	16	124
37	31	135
38	22	157
39		

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

Stats	
X	
Test T	3.06548938
P	0.00205265
DF	36
β_0	91.2682986
β_1	1.4928966
serrLine	17.4987212
serrSlope	0.487001067
serrInter	8.93421518
r	0.454972515
R ²	0.20699999
Calculated test probability	

The results agree with our previous calculations. The results include the t-value ($t=3.065489$) and its associated probability ($p=0.002053$). The results also include the slope ($b_1=1.492897$) and its standard error ($serrSlope=0.487001$), the intercept ($b_0=91.268299$) and its standard error ($serrInter=8.934215$), the standard deviation of the residuals ($serrLine=17.498721$), the correlation coefficient ($r=0.454973$) and the coefficient of determination ($R^2=0.207$). Note that the *Inference* app can also calculate confidence intervals for slope; this is covered in HP Prime Technology Corner 28.