

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 $\beta_1 > 0$.
- Enter the crycounts in XList and the IQ data in YList. The data can be found on Page 754.

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

	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 ($\text{serrSlope}=0.487001$), the intercept ($b_0=91.268299$) and its standard error ($\text{serrInter}=8.934215$), the standard deviation of the residuals ($\text{serrLine}=17.498721$), 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.