

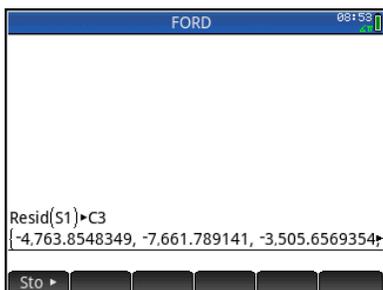
TECHNOLOGY CORNER for Section 3.2, Page 175

9. Residual plots on HP Prime

Let's continue the analysis of the Ford F-150 miles driven and price data from the previous Technology Corner (page 171). You should have already made a scatterplot, calculated the equation of the least-squares regression line, and graphed the line on your plot. Now, we want to calculate residuals and make a residual plot. We can use the Statistic 2Var app function Resid to calculate the residuals and store them in a list. The syntax for the Resid function is Resid(S_n), where S_n is one of the five Symbolic view definitions S1-S5.

- Calculate the residuals and store them in list C3 of the Statistics 2Var app.

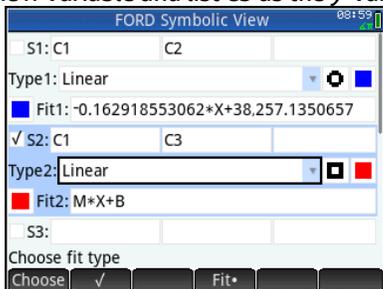
- With S1 defined from the previous Technology Corner, press to go to Home view. Press tap tap *Statistics 2Var*, and select *Resid*. Enter S1 as the argument and tap after the right parenthesis. Tap then enter C3 and press .



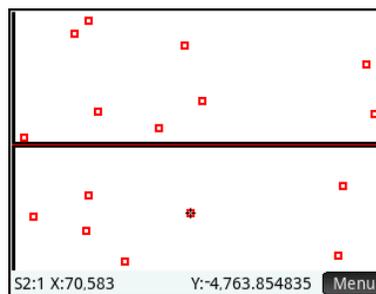
- Tap to see the residuals in list C3 of the Numeric view.

FORD Numeric View				
	C1	C2	C3	C4
1	70,583	21,994	-4,763.854	
2	129,484	9,500	-7,661.789	
3	29,932	29,875	-3,505.656	
4	29,953	41,995	8,617.764	
5	24,495	41,995	7,728.554	
6	75,678	28,986	3,058.215	
7	8,359	31,891	-5,004.298	
8	4,447	37,991	458.363	
9	34,077	34,995	2,289.640	
10	58,023	29,988	1,183.888	
			-4,763.8548349	

- To plot the residuals press and uncheck S1 (select it and tap). Specify S2 with list C1 as the x-variable and list C3 as the y-variable.



- Press and tap *Autoscale* to see the residual plot.



The x axis in the residual plot serves as a reference line: points above this line correspond to positive residuals and points below the line correspond to negative residuals.

- Press to return to Numeric view and tap .

- Tap to see the sum of the residuals, which is very near zero. The standard deviation of the residuals is shown.

FORD Numeric View	
S2	
\bar{y}	-0.0000005625
ΣY	-0.0000009
ΣY^2	461,287,508.727
sY	5,545.49371849
σY	5,369.40120455
$serrY$	1,386.37342962
ssY	461,287,508.727

- Tap when you are done.