

Stats on the TI-89

We often will have a problem in a class where we are given some data and need to find an equation to fit that data. Look at an example in the following book.

Statistics, second ed. James T. McClave and Frank H. Dietrich, II.

The power usage for a small town at various temperatures is given in the following table. Which type of model best fits this data? Find the model.

temp, ° F	68	76	85	92	100
Power	96.3	100.9	111.4	135.1	143.6

We can choose the following types of regression:

1-Var Stats the statistics results for one variable.

2-Var Stats returns the statistics results for two variables, e.g. \bar{x} , $\sum x^2$, σy .

LinReg(a+bx) for linear regression, $y = a + bx$

LinReg(ax+b) for linear regression, $y = ax + b$.

QuadReg for quadratic regression, $y = ax^2 + bx + c$.

CubicReg for 3rd order regression, $y = ax^3 + bx^2 + cx + d$.

QuartReg for 4th order regression, $y = ax^4 + bx^3 + cx^2 + dx + e$.

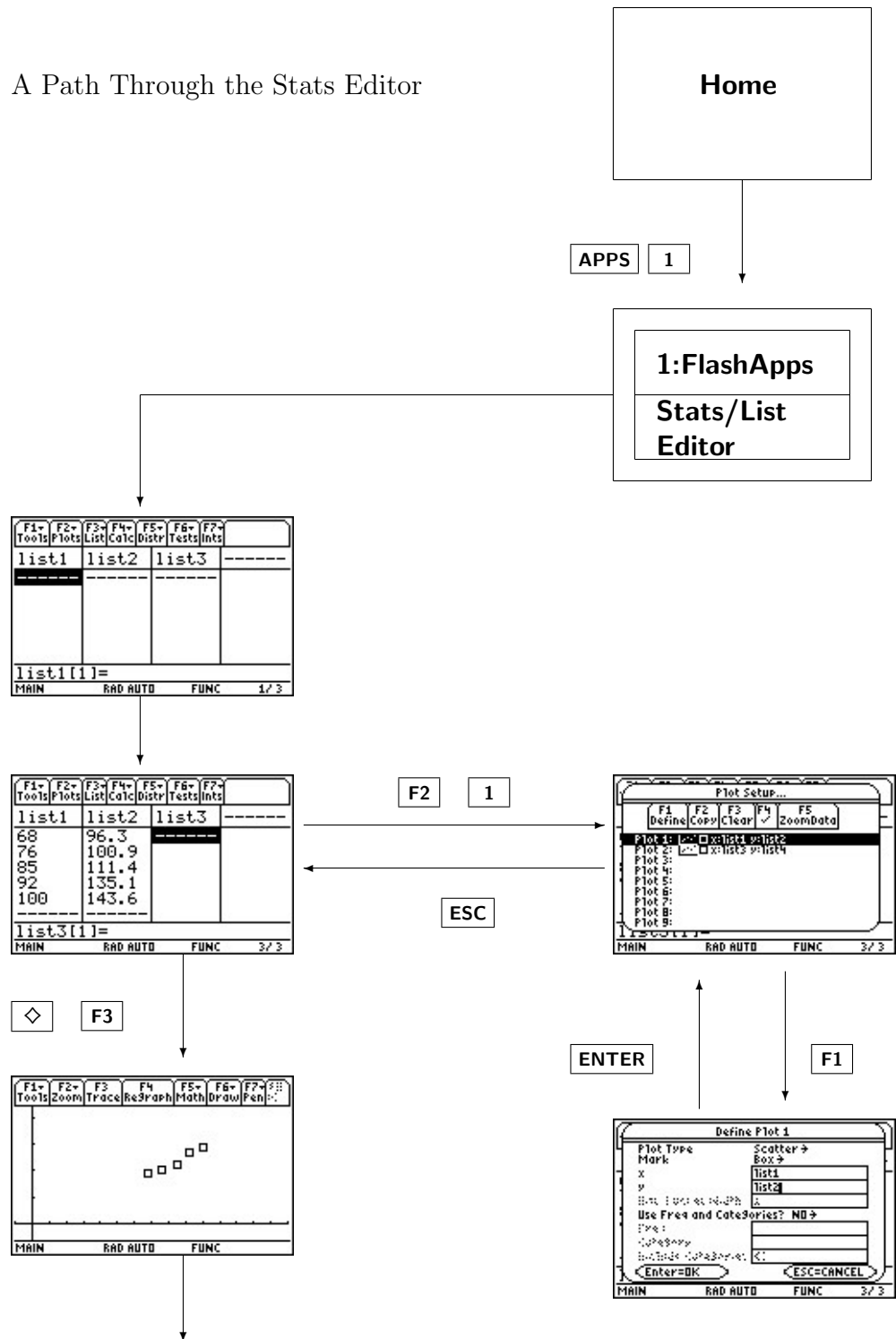
LnReg for logarithmic regression, $y = a + b \ln(x)$.

ExpReg for exponential regression, $y = a \cdot b^x$.

PowerReg for power regression, $y = a \cdot x^b$.

Below is a possible path through the Stats Editor using Linear Regression.

A Path Through the Stats Editor



APPS 1

F1+ Tools	F2+ Plots	F3+ List	F4+ Calc	F5+ Distr	F6+ Tests	F7+ Ints
list1	list2	list3	-----			
68	96.3					
76	100.9					
85	111.4					
92	135.1					
100	143.6					
list3[1]=						
MAIN RAD AUTO FUNC 3/3						

F4 3

3: Regressions

2

(2:LinReg)

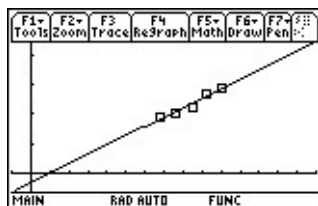
F1+ Tools	F2+ Plots	F3+ List	F4+ Calc	F5+ Distr	F6+ Tests	F7+ Ints
list1	list2	list3	resid			
68	96.3		4.7362			
76	100.9		-3.452			
85	111.4		-7.339			
92	135.1		5.1714			
100	143.6		.88318			
resid[6]=						
MAIN RAD AUTO FUNC 4/4						

ENTER

LinReg(ax+b)...	
X List:	list1
Y List:	list2
Store ResEqn to:	y1(x)→
Freq:	1
Category List:	
Include Categories:	EQ
Enter=OK ESC=CANCEL	
MAIN RAD AUTO FUNC 3/3	

◇ F3

(to graph)



Done in L^AT_EX.