

TI-84 Labs For Statistics 301

Elementary Statistical Methods

by

Jonathan Kuhn, Ph.D.
Associate Professor of Statistics,
Mathematics, Statistics and Physics,
Purdue University North Central

© by Jonathan Kuhn

Attendance	Chapter	Topics	Description
1	1	On and Off	
1	1	Random Number Generator	MATH PRB RandInt
2	2	Lists	L_1, \dots, L_6
2	2	Clearing Histograms and Other Plots	CLEAR
2	2	Histogram From Raw Data	2nd STAT PLOT, ZOOM ZoomStat, GRAPH, TRACE
2	2	Histogram From Distribution Data	2nd STAT PLOT, ZOOM ZoomStat, GRAPH, TRACE
2	2	Stem and Leaf Display	
3	3	Summary Statistics	STAT CALC 1-Var Stats L_1
3	3	Grouped data	STAT CALC 1-Var Stats L_1, L_2
3	3	Box and Whiskers Plot	2nd STAT PLOT
4	4	Correlation Coefficient and Scatter	STAT CALC LinReg, 2nd CATALOG
4	4	Linear Regression	STAT CALC LinReg
5	5	Factorials, Permutation, Combination	MATH PRB
6	6	Discrete Probability Distribution	L_1, \dots
6	6	Expected Value and Variance	L_1, \dots
6	6	Binomial Probability Distribution	2nd DISTR binompdf
6	6	Binomial Cumulative Distribution	2nd DISTR binomcdf
6	6	Graphing The Binomial Distribution	WINDOW, GRAPH
6	6	Poisson Distribution Function	2nd DISTR poissonpdf, poissoncdf
6	6	Graphing The Poisson Distribution	WINDOW, GRAPH
7	7	Probabilities, Percentiles, Normal	2nd DISTR normalcdf, InvNorm
7	7	Graphing The Normal Distribution	2nd STAT PLOT, ZOOM ZoomStat, GRAPH, TRACE
7	7	Normal Probability Plot	2nd STAT PLOT, ZOOM ZoomStat, GRAPH, TRACE
8	8	Sampling Distributions	2nd DISTR normalcdf, InvNorm
9	9	CI For Mean, Known σ	STAT TESTS ZInterval
9	9	CI For Mean, Unknown σ	STAT TESTS TInterval
9	9	CI For Proportion	STAT TESTS 1-PropZInt
9	9	Probability For t -distribution	2nd DISTR tcdf
9	9	Percentile For t -distribution	PRGM prgmINVT
9	9	Graphing The t -distribution	WINDOW, GRAPH, 2nd DISTR DRAW
9	9	Probability Chi-Square	2nd DISTR χ^2 cdf
9	9	Percentile Chi-Square	PRGM INVCHI2
9	9	Graphing Chi-Square Distribution	WINDOW, 2nd DISTR χ^2 pdf
10	10	Test For Mean, Known σ	STAT TESTS Z-Test
10	10	Test For Mean, Unknown σ	STAT TESTS T-Test
10	10	Test For Proportion	STAT TESTS 1-PropZTest
10	10	Test For Variance	2nd DISTR χ^2 cdf
11	11	CI For Difference In Means	STAT TESTS 2-SampTInt
11	11	Test For Difference in Means	STAT TESTS 2-SampleTTest
11	11	CI For Difference In Proportions	STAT TESTS 2-PropZInt
11	11	Test For Difference in Proportions	STAT TESTS 2-PropZTest
11	11	Test of Ratio of Variances	STAT TESTS 2-SampFTest
11	11	Probability F Distribution	2nd DISTR Fcdf
11	11	Percentile F Distribution	PRGM INV F
11	11	Graphing The F Distribution	WINDOW, 2nd DISTR Fpdf, DRAW
12	12	Goodness of Fit	2nd DISTR χ^2 GOF-Test
12	12	Test of Independence/Homogeneity	STAT TESTS χ^2 -Test
13	13	One Way Analysis of Variance	STAT TESTS ANOVA
14	14	Standard Error of Estimate	STAT TESTS LinRegTTest
14	14	Test/CI β_1 ; CI/PI \hat{y}	STAT TESTS LinRegTTest

TI-84+ Lab 1 For Statistics 301

Topics: on/off, random numbers generator

On and Off. In this exercise we will learn how to turn your calculator ON and OFF.

- Turn on the calculator by pressing the ON button, a black button on the lower left of the calculator. You are at the MAIN screen.
- Turn off your calculator by pushing “2nd”, a yellow button in the upper left corner, followed by ON.

Random Number Generator. To generate 20 numbers chosen at random from between 0 and 99, we must first store seed 7 in the random number generator. This essentially changes the “pointer” in the TI-83 to a different location in the random number list stored in the calculator. When everyone in the lab puts in seed 7, all calculators will generate the *same* sequence of random numbers. On the quiz or homework, a seed will be specified, so that everyone in the class uses the same random number sequence and so generates the same sampling distribution.

7 STO → MATH PRB rand ENTER

The number 7 is returned.

Twenty random numbers between 0 and 99 are generated as follows:

MATH PRB randInt(0, 99, 20) ENTER

The following sequence of random integer values is returned:

21, 99, 57, 28, 80, 59, 56, 35, 89, 85, 54, 64, 82, 41, 2, 49, 66, 41, 64, 67.

This is *not* a simple random sample *without* replacement because values 41 and 64 both occur twice. A simple random sample *without* replacement of 18 numbers can be created from the 20 numbers here simply by eliminating (not using) the duplicate values 41 and 64. If 20 numbers are required, then the randInt function of the calculator could be used again to generate a few more numbers; two numbers which do not duplicate the first 18 would then be used.