

Name Last _____ First _____ Class Time _____

Introduction to Using your TI-Calculator for Statistics: HOMEWORK Due _____

Generating Random Numbers on Your Calculator

TI-83, 84: MATH arrow right over to "PRB" arrow down to 5:randInt and press ENTER

TI-86: 2nd MATH F2:Prob F5:RandIn

General Syntax: RandInt(*lower bound, upper bound, number of random integers desired*)

Examples: RandInt(1,30) will return one random integer (whole number) between 1 and 30.

Repeat this 8 times to get a sample of 8 individuals

OR RandInt (1, 30, 8) will return 8 random integers between 1 and 30

RandInt (7, 12, 2) will return 2 random integers between 7 and 12

Important : Do this the first time you use your calculator,

so that students set different starting places for their random number generators:

randInt (1, last 3 digits of your phone number, number of letters in your first name)

1. Read about sampling methods in chapter 1. Use this population to generate samples.

Random selections should be made using random numbers generated with your calculator.

Population: 24 Students in a Math 10 Class

	Row 1	Row 2	Row 3	Row 4			
1	Gauss	7	Cramer	13	Fermat	19	Norwood
2	Bernoulli	8	Cochran	14	Neyman	20	Laplace
3	Pascal	9	Yates	15	Poisson	21	Mahalanobis
4	Fisher	10	Gossett	16	Venn	22	Cardano
5	Pearson	11	Tukey	17	Bayes	23	Markov
6	Rao	12	Cox	18	Blackwell	24	Weibull

For each sample below, write both the number and name of each student selected.

- a. Select a **simple random sample** of 6 students by using the randInt command on your calculator to generate 6 different random numbers between 1 and 24

- b. Select a **stratified sample** of 8 students, by randomly selecting 2 students from each row. Use the randInt command 4 times to generate 2 different random numbers for each row, specifying the lowest and highest possible number of the students for that row.

- c. Select a **cluster sample** of 12 students. Randomly select 2 rows using row numbers randInt to generate 2 different random numbers between 1 and 4. Use all students in each selected row, using.

- d. Select a **systematic sample** of 6 students. Randomly select a number between 1 and 4 to choose the first member of the sample. Then select every 4th student until you have selected a systematic sample of 6 students.

Part B. Entering Data and Finding Summary Statistics

TI-83+ & TI-84+: step by step instructions are given on this page.

TI-86 & TI-89: see the calculator instructions handout from the website.

1. Enter data Section 1.9 of textbook into the statistics list editor using one list:

Individual Data Values: Hours worked per day by a sample of 20 students:

5, 6, 3, 3, 2, 4, 7, 5, 2, 3, 5, 6, 5, 4, 4, 3, 5, 2, 5, 3

TI-83, 84: **STAT** press **ENTER** for “**EDIT**”. Put data into list **L1** pressing **ENTER** after each value

TI-83, 84: **2nd QUIT** to exit stat list editor after you have entered data, checked it and corrected errors.

Find 1-Variable Summary Statistics using one data list:

TI-83, 84: **STAT** arrow right to “**CALC**” press **ENTER** for *1-Var Stats* **2nd L1 ENTER**.

(If data are in a different list than L1, indicate the appropriate listname)

Read and record the following summary statistics output for 1 Var-Stats:

Average \bar{X} = _____ Sum Σx = _____ Count n = _____ Sample Standard Deviation S_x = _____

Arrow down using cursor key to second screen to find median and quartiles.

First quartile Q_1 : _____ Median _____ Third quartile Q_3 : _____

2. **SORT** data into ascending order; use sorted data to create a frequency table.

TI-83, 84: **STAT** arrow down to “**SORTA**” press **ENTER** press **2nd L1** press **ENTER**

Calculator shows “**DONE**”: **STAT** press **ENTER** for “**EDIT**” to see the data now sorted in list **L1**

Look at the sorted data. Count how many times each value appears.
The number of times a data value appears is its “**FREQUENCY**”.

Data can be summarized in a frequency table.

X is the number of hours worked.

The frequency is the number of students who worked X hours.

Fill in frequency in the table at the right.

Your frequency column should total 20 – check it.

Hours Worked (X)	Frequency
2	
3	
4	
5	
6	
7	

3. Entering data from a frequency table into the statistics list editor using two lists:

TI-83, 84: **STAT** press **ENTER** for “**EDIT**” Put hours into list **L2** and Frequency into list **L3**

TI-83, 84: **2nd QUIT** to exit stat list editor after you have entered data, checked it and corrected errors.

Find 1-Variable Summary Statistics using two lists (data and frequency):

TI-83,84: **STAT** arrow right to “**CALC**” press **ENTER** for *1-Var Stats* **2nd L2** , **2nd L3** **ENTER**

(If data are in different lists than L2 and L3, indicate the appropriate listnames)

Read and record the summary statistics output for 1 Var-Stats:

Average \bar{X} = _____ Sum Σx = _____ Count n = _____ Sample Standard Deviation S_x = _____

Arrow down using cursor key to second screen to find median and quartiles.

First quartile Q_1 : _____ Median _____ Third quartile Q_3 : _____

Your answers for the summary statistics in #1 and #3 should agree with each other. Check it!

If not, check your work for this whole page again to find your errors.

Get help if you are having problems. You need to master both methods - important Math 10 survival skill!