

Activity 1

Frequency Distributions

TEACHER NOTES

Topic Area: Data Analysis and Probability

NCTM Standard: Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them.

Objective: The student will be able to utilize the Casio fx-9860G Plus calculator to organize data for frequency distribution tables.

Introduction: This activity is designed to demonstrate the procedure to enter data into the Casio fx-9860G Plus graphing calculator in order to organize data into a frequency distribution table.

The students should be familiar with the following vocabulary.

Class intervals

Class limits

Class marks

Frequency Distribution

Midpoint

Range of Data

Calculator Notes for Activity 1

Objective: The student will be able to utilize the Casio fx-9860G Plus calculator to organize data for frequency distribution tables.

Steps for Utilizing Frequency Distributions

Problem: The following are scores that 75 students received on a 100 point exam. Construct a frequency distribution table on the calculator using class marks and frequencies.

98, 85, 76, 83, 74, 85, 62, 79, 85, 89, 98, 87, 92, 84, 63, 28, 49, 88, 87, 92, 83, 79, 75, 68, 75, 96, 90, 83, 85, 68, 82, 85, 95, 100, 83, 79, 63, 85, 68, 86, 86, 85, 94, 89, 69, 98, 89, 89, 67, 84, 75, 76, 79, 87, 89, 95, 93, 86, 87, 88, 96, 57, 78, 64, 89, 75, 79, 82, 94, 96, 85, 95, 87, 88, 75

1. The first step is to enter this data into the calculator. To do this, turn the calculator on and go to the Stat menu (use the following key strokes).

Op\$|

Your screen should look like the following screen:

	List 1	List 2	List 3	List 4
SUB				
1				
2				
3				
4				

GRAPH CALC TEST DISTR DIST

If your screen has numbers in the lists, you will need to delete them. To do this press the following keys to get the previous screen.

urq

Next, you can label the list column as SCORES. To do this, press the following keys:

BLamG96jml

Your screen should look like this:

	List 1	List 2	List 3	List 4
SUB	SCORES			
1	0			
2				
3				
4				

TOOL EDIT DEL DELA INS

To enter the data into list 1, enter each of the numbers and press execute after each one. Your key strokes are as follows:

98|85|76|83|74|85|62|79|85|89|98|87|9
 2|84|63|28|49|88|87|92|83|79|75|68|75|
 96|90|83|85|68|82|85|95|100|83|79|63|
 85|68|86|86|85|94|89|69|98|89|89|67|8
 4|75|76|79|87|89|95|93|86|87|88|96|57|
 78|64|89|75|79|82|94|96|85|95|87|88|7
 5|

Your final screen should look like the following. Notice that the last number entered is the 75th number in the list.

	List 1	List 2	List 3	List 4
SUB	SCORES			
73	87			
74	88			
75	75			
76				

TOOL EDIT DEL DELA INS D

2. The next step is to make a frequency distribution table. Since the data is large, you will want to make a frequency distribution table using intervals. First, let the calculator do the work by putting the numbers in order from smallest to largest, known as an array. Press the following keys:

qq1l1l

Your screen should look like this:

	List 1	List 2	List 3	List 4
SUB	SCORES			
73	98			
74	98			
75	100			
76				

SRT-A SRT-D TOP BTM

Since the data is so large, use intervals of 10.

Interval	Frequency
0-10	0
10-20	0
20-30	1
30-40	0
40-50	1
50-60	1
60-70	9
70-80	14
80-90	33
90-100	16

The class interval = 10

The class limits are: 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, and 100.

The class marks which are the midpoint of the intervals are 5, 15, 25, 35, 45, 55, 65, 75, 85, and 95.

3. Next, to make the frequency distribution table on the calculator, start by clearing the screen on the calculator using the following key strokes:

drq

Your screen should look like this:

	List 1	List 2	List 3	List 4
SUB				
1				
2				
3				
4				

TOOL EDIT DEL DELA INS D

When putting a frequency distribution table into the calculator, list 1 should be the class marks and list 2 should be the frequency. Start by labeling list 1 MARKS and list 2 FREQ. Use the following key strokes:

BLA7f6,mLa\$Bk6j5I!

Your screen should look like this:

	List 1	List 2	List 3	List 4
SUB	MARKS	FREQ		
1	0	0		
2				
3				
4				0

TOOL EDIT DEL DELA INS D

Now, you are ready to enter the class marks into list 1 and frequencies into list 2. Use the following key strokes.

5|15|25|35|45|55|65|75|85|95|
 \$B0|0|1|0|1|1|9|14
 |33|16|

Your screen should look like this:

	List 1	List 2	List 3	List 4
SUB	MARKS	FREQ		
8	75	14		
9	85	33		
10	95	16		
11				

TOOL EDIT DEL DELA INS D

Name _____ Class _____ Date _____

Activity 1: Worksheet Frequency Distributions

For each list of data, construct a frequency distribution table on the fx-9860G Plus graphing calculator, using the class marks and frequencies. Use the given class interval for each problem.

- 32, 45, 46, 33, 25, 58, 55, 52, 31, 29, 36, 45, 51, 56, 51, 43, 32, 29, 31, 40, 42, 30, 35, 35, 39, 47, 26, 51, 57, 55, 42, 46, 53, 42, 41, 33, 35, 38, 50, 51, 52, 37, 38, 43, 47, 44, 52, 52, 38, 32, 53, 39, 31, 49, 48, 48, 45, 43, 46, 39, 52, 49, 38. **Class Interval = 5.**
- 20, 62, 55, 58, 53, 43, 39, 23, 16, 21, 28, 53, 61, 62, 60, 50, 45, 55, 53, 58, 57, 58, 58, 51, 37, 36, 29, 45, 33, 32, 26, 25, 17, 26, 29, 39, 33, 37, 48, 42, 26, 47, 42, 49, 39, 40, 42, 38, 37, 30, 21, 20, 19, 29, 52, 47, 36, 31, 52, 28, 37, 41, 49. **Class Interval = 8.**

3. 19, 26, 23, 22, 34, 43, 41, 43, 43, 42, 39, 26, 27, 31, 42, 40, 39, 37, 33, 30, 22, 19, 20, 30, 34, 34, 38, 27, 22, 29, 39, 41, 42, 45, 46, 44, 42, 47, 21, 29, 22, 28, 30, 31, 43, 41, 39, 33, 34, 34, 38, 27, 22, 26, 23, 34, 32, 31, 41, 42, 33. **Class Interval = 3.**
4. 12, 88, 81, 83, 34, 23, 18, 19, 34, 22, 20, 19, 55, 67, 66, 36, 84, 76, 72, 64, 81, 84, 76, 78, 68, 46, 55, 50, 24, 42, 76, 56, 43, 49, 50, 58, 56, 75, 24, 15, 41, 30, 53, 76, 81, 86, 49, 42, 55, 59, 62, 63, 74, 68, 60, 71, 37, 38, 39, 37, 49, 25, 72, 66, 77, 45, 59, 57, 62, 73, 57, 47, 24, 29, 38, 49, 82, 13, 16, 63, 56, 52, 59, 64, 78, 24. **Class Interval = 10.**

Solutions to Activity 1 Worksheet

1.

	List 1	List 2	List 3	List 4						
SUB	MARKS	FREQ								
1	27.5	4								
2	32.5	9								
3	37.5	12								
4	42.5	9								
				4						
<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td>TOOL</td> <td>EDIT</td> <td>DEL</td> <td>DEL-A</td> <td>INS</td> <td>D</td> </tr> </table>					TOOL	EDIT	DEL	DEL-A	INS	D
TOOL	EDIT	DEL	DEL-A	INS	D					

	List 1	List 2	List 3	List 4
SUB	MARKS	FREQ		
5	47.5	12		
6	52.5	12		
7	57.5	5		
8				

TOOL EDIT DEL DELA INS D

2.

	List 1	List 2	List 3	List 4
SUB	MARKS	FREQ		
1	20	8		
2	28	11		
3	36	13		
4	44	10		

TOOL EDIT DEL DELA INS D

	List 1	List 2	List 3	List 4
SUB	MARKS	FREQ		
4	44	10		
5	52	12		
6	60	9		
7				

TOOL EDIT DEL DELA INS D

3.

	List 1	List 2	List 3	List 4
SUB	MARKS	FREQ		
1	20.5	4		
2	23.5	7		
3	26.5	6		
4	29.5	6		
				4
TOOL EDIT DEL DEL A INS D				

	List 1	List 2	List 3	List 4
SUB	MARKS	FREQ		
5	32.5	7		
6	35.5	6		
7	38.5	7		
8	41.5	1		
				1
TOOL EDIT DEL DEL A INS D				

	List 1	List 2	List 3	List 4
SUB	MARKS	FREQ		
8	41.5	1		
9	44.5	6		
10	47.5	2		
11				
TOOL EDIT DEL DEL A INS D				

4.

	List 1	List 2	List 3	List 4
SUB	MARKS	FREQ		
1	15	7		
2	25	9		
3	35	9		
4	45	11		
				15
TOOL	EDIT	DEL	DEL-A	INS
				D

	List 1	List 2	List 3	List 4
SUB	MARKS	FREQ		
5	55	16		
6	65	12		
7	75	13		
8	85	9		
				85
TOOL	EDIT	DEL	DEL-A	INS
				D