

TI-83 & TI-84: Choosing an SRS


The following pages contain some instructions on the usage of the TI-83/83 Plus graphing calculator.

The example used below is taken out of David Moore's text titled "The Basic Practice of Statistics, 2nd Edition".

Example#3.4 How to choose an SRS p. 172: Joan's small accounting firm serves 30 business clients. Joan wants to interview a sample of 5 clients in detail to find ways to improve client satisfaction. To avoid bias, she chooses an SRS of size 5.

Here is the list of clients, with 30 two-digit labels attached:



- | | |
|-----------------------------|--------------------------|
| 01 A-1 Plumbing | 02 Accent Printing |
| 03 Action Sport Shop | 04 Anderson Construction |
| 05 Bailey Trucking | 06 Balloons Inc. |
| 07 Bennett Hardware | 08 Best's Camera Shop |
| 09 Blue Print Specialties | 10 Central Tree Service |
| 11 Classic Flowers | 12 Computer Answers |
| 13 Darlene's Dolls | 14 Fleisch Realty |
| 15 Hernandez Electronics | 16 Johnson Commodities |
| 17 JL Records | 18 Keiser Construction |
| 19 Liu's Chinese Restaurant | 20 Magic Tan |
| 21 Peerless Machine | 22 Photo Arts |
| 23 River City Books | 24 Riverside Tavern |
| 25 Rustic Boutique | 26 Satellite Services |
| 27 Scotch Wash | 28 Sewer's Center |
| 29 Tire Specialties | 30 Von's Video Store |


Starting from the Home screen access the MATH menu by pressing . At this point, your screen should look like the screen on the left given below.

```
MATH NUM CPX PRB
1: Frac
2: Dec
3:
4: √(
5: *√
6: fMin(
7: fMax(
```

```
MATH NUM CPX PRB
1: rand
2: nPr
3: nCr
4: !
5: randInt(
6: randNorm(
7: randBin(
```

```
randInt(
```

Press  three times to scroll right to the PRB menu option. Press  four times to move the cursor down to **5:randInt(**. At this point, your screen should look like the screen in the middle given above.

Press  to select **5:randInt(** from the MATH PRB menu and paste it onto the Home screen. At this point, your screen should look like the screen on the right given above with the cursor blinking by the left parenthesis.

The three arguments for the **randInt(** command are the lower bound, upper bound, and the number of integers in the randomly generated sequence of integers, respectively. The arguments are separated by commas.

The lower bound is the smallest number used in labeling the list of clients. The upper bound is the largest number used in labeling the list of clients. Since the size of the SRS is 5 in this example, the third argument can be any integer that is greater than or equal to five. In case of repetitions let us generate 10 random integers. To generate the first 10 random integers between 1 and 30, type in 1. Press **⌘**. Type in 30. Press **⌘**. Type in 10. Press **⌘**. Your screen should look like the screen on the left given below. Press **ENTER**. Your screen should look like the screen in the middle below.

```
randInt(1,30,10)
```

```
randInt(1,30,10)  
{22 4 12 18 18 ...
```

```
randInt(1,30,10)  
...18 11 7 9 27 6}
```

Only the first five of the randomly generated integers between 1 and 30 are shown on the display. To see the rest of the randomly generated integers you may want to scroll horizontally by pressing **⌘** several times till you reach the right curly bracket. The rest of the ten randomly generated integers are given on the right above. Since this is a random generation process, your randomly generated ten integers probably will not be the same as the ten random integers generated here.

Therefore, the first 10 randomly generated integers between 1 and 30 are as follows:

22 4 12 18 18 11 7 9 27 6

Each one of the ten integers above represents a client label. The first four are the clients labeled 22, 4, 12, and 18. The fifth client label is the same as the fourth one. Ignore the fifth label because that client is already in the sample. Move to the next randomly generated integer in the client label list.

Therefore, the simple random sample consists of the clients labeled 22, 4, 12, 18, and 11. These are Photo Arts, Anderson Construction, Computer Answers, Keiser Construction, and Classic Flowers.