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 \( \text{MATH} \). At this point, your screen should look like the screen on the left given below.

\[
\begin{array}{ccc}
1: \text{Frac} & 1: \text{Rand} & \text{randInt} \\
2: \text{Dec} & 2: \text{IntPr} & \text{randNorm} \\
3: \text{Fix} & 3: \text{IntCr} & \text{randBin} \\
4: \text{Frac} & 4: \text{Frac} & \text{rand} \\
5: \text{Int} & 5: \text{Int} & \text{Int} \\
6: \text{FMin} & 6: \text{FMin} & \text{FMin} \\
7: \text{FMax} & 7: \text{FMax} & \text{FMax} \\
\end{array}
\]

Press \( \uparrow \) three times to scroll right to the PRB menu option. Press \( \downarrow \) four times to move the cursor down to \( \text{randInt} \). At this point, your screen should look like the screen in the middle given above.

Press \( \text{ENTER} \) to select \( \text{randInt} \) 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 ENTER. Type in 30. Press ENTER. Type in 10. Press ENTER. 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)       randInt(1,30,10)
22 4 12 18 18 ...      ...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.