

# Birthday Paradox

## Random Integers on TI83/TI84Plus

### 1. Enter the random data into the calculator

- Choose the **[STAT]** key
- Choose [1.Edit] from the **[EDIT]** menu
- Move the cursor up so that [L1] is selected

To populate [L1] with random numbers:

- Press **[MATH]** and move to the PRB menu.
- Select 5:randInt(
- Enter the numbers 1, 12, 23 and )
- Press **[ENTER]** and then **[STAT]**[EDIT] to view your random list.

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

L1	L2	L3	2
10	12		
10			
11			
12			
12			
12			
12			
12			
L2 =randInt(1,31			

To populate [L2] with random numbers:

- Repeat the steps above, but with [L2] selected.
- ALSO – use randInt(1, 31, 23)

### 2. Sort and look for Duplicates

- Select [L3] from **[STAT]**[EDIT]
- Enter this formula to get a unique number for each date:  $L_3=100*L_1+L_2$
- Sort with the following steps:
  - Press **[STAT]** and select 2.SortA(
  - Enter the arguments  $L_3, L_1, L_2$
- View the sorted list of numbers in  $L_3$  to find duplicate dates.

```
EDIT CALC TESTS
1:Edit...
2:SortA(
3:SortD(
4:ClrList
5:SetUpEditor
```

```
SortA(L3,L1,L2)
Done
```

L1	L2	L3	3
10	12	1012	
10	31	1031	
11	11	1111	
12	5	1205	
12	5	1205	
12	16	1216	
12	25	1225	
L3(34)=1012			