

# Statistical Simulations - 3

*This resource was written by Derek Smith with the support of CASIO New Zealand. It may be freely distributed but remains the intellectual property of the author and CASIO.*



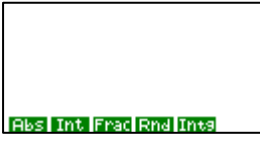
Select RUN mode from the main menu by using the arrow keys to highlight the RUN icon or pressing 1.



**Note:** Rolling a dice with 4 – n sides or using the calculator random number generator to do simulations- not much of a choice really!  
The calculator will generate a 10 digit random number 0.abcdefghij BUT to simulate LOTTO (in New Zealand):

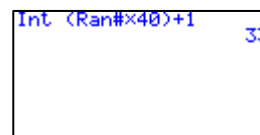
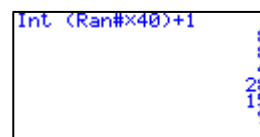
$$\text{Int}(\text{ran}\# \times 40)+1$$

is required.

1. OPTN key		2. F6 key	
3. F4 key		4. F2 key	
5. OPTN key		6. F6 key	
7. F3 key		8. F4 key	

This will generate a random number that is either a 1, 2, 3, . . . . . 38, 39 or 40.

**Example 1:** Push the **EXE** key at least 6 times (so that you do not get a repeated number, and this will generate 6 numbers (simulation of the LOTTO balls rolling out of the barrel).



8      8 (ignore this 8)      4      28      15      9      33

generated numbers are:

8	4	28	15	9	33
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Repeat this process a number of times and record the sum of all 6 numbers that are generated.

In the example above:

8	4	28	15	9	33
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**Total = 97**

Collate the data you have generated with other members of the class and see if you get a pattern. Why does this happen?

Sum (in 10's)	Tally / frequency
0-	
10-	
20-	
30-	
40-	
50-	
60-	
70-	
80-	
90-	
100-	
110-	
120-	
130-	
140-	
150-	
160-	
170-	
180-	
190-	
200-	
220-	
230-240	