

# Sampling - using random numbers.

*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 GRAPH mode from the main menu by using the arrow keys to highlight the RUN icon or pressing 1 and in the STAT icon or pressing 2.



## Introduction

Random number generators are used to simulate events. Applications can be made to long run probability – trialling to see how simulations approximate given probabilities. This statistical analysis leads onto the Central Limit Theorem (CLT).

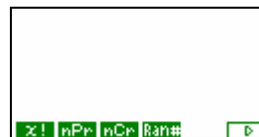
‘Random number’ is found through the menu trail:



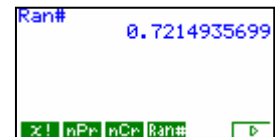
OPTN



F6



F3



F4

‘Integer value’ is found through the menu trail:



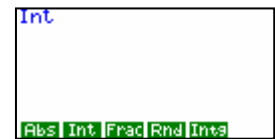
OPTN



F6



F4

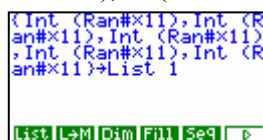


F2

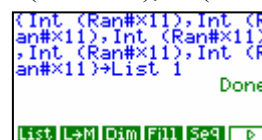
**Example:** Generate 5 random numbers between 0 and 10 and place them in List 1 of the STAT icon.  
Enter into the STAT icon and find the average (mean) and standard deviation of the sample.

**Answer:** Type in the RUN icon:

{Int(Ran#x11), Int(Ran#x11), Int(Ran#x11), Int(Ran#x11), Int(Ran#x11)} → List 1



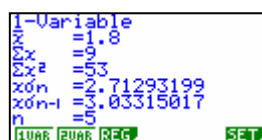
press **EXE**



and ‘Done’ will appear.

Pressing **EXE** transfers the random numbers generated to List 1.

Enter into STAT icon and ‘call up’ the 1-VAR (one variable statistics) from List 1.  
**[N.B. Make sure that the 1-VAR is set up to generate the statistics from List 1.]**



Mean = 1.8  
Std Dev = 3.03315017 (Sample Std Dev)