

Module : Statistics and probability

Part B – Estimating random events

The fairness of an event can be simulated on a calculator using the mean as way of judging the fairness of a random event.

We must first find the mean of a fair six sided cube. Find the mean of the probability of each face times its value and add them together.

AC (1 + 2 + 3 + 4 +
 5 + 6) × 1 ÷ 6 =
 S+D

$$(1+2+3+4+5+6) \times \frac{1}{6} = 3.5$$

To make a table of 20 random value between 1 and 6. Change the MODE on the calculator by pressing and selecting table **MODE** **3**.

MODE **3**
ALPHA **.** **1** **SHIFT** **)** **6** **)** **=**
=
2 **0** **=**
=

1 COMP	2 STAT								
3 TABLE									
f(X)=Int#(1,6)									
g(X)=									
Start?									
1									
End?									
20									
Step?									
1									
<table border="1"> <tr> <td>X</td> <td>F(X)</td> </tr> <tr> <td>1</td> <td>2</td> </tr> <tr> <td>2</td> <td>5</td> </tr> <tr> <td>3</td> <td>1</td> </tr> </table>	X	F(X)	1	2	2	5	3	1	1
X	F(X)								
1	2								
2	5								
3	1								

Create a frequency table to count the number of times every integer between 1 and 6 appears. Calculate the mean in COMP mode. For this example.

Number	Frequency
1	2/20
2	6/20
3	3/20
4	5/20
5	3/20
6	1/20

1 COMP	2 STAT
3 TABLE	
$\left(1 \times \frac{2}{20}\right) + \left(2 \times \frac{6}{20}\right) + \dots$	
3.2	

