

## Experimental and Theoretical Probability – Dice Differences

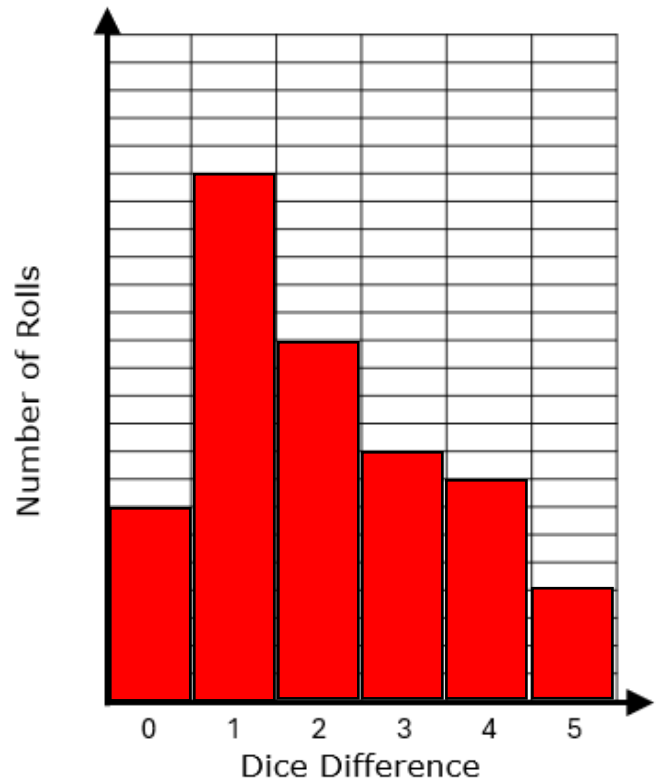
**(a)**

Roll two dice. Find the difference between the two numbers shown. Repeat the experiment 60 times, tallying and totalling the results. **Example data:**

Dice Difference	Tally	Total
0		7
1	       	19
2	 	13
3		9
4		8
5		4

**(b)**

Show your information as a graph.



**(c)**

Complete the sample space to show all possible dice differences.

	1	2	3	4	5	6
1	0	1	2	3	4	5
2	1	0	1	2	3	4
3	2	1	0	1	2	3
4	3	2	1	0	1	2
5	4	3	2	1	0	1
6	5	4	3	2	1	0

**(d)**

Calculate the experimental and theoretical probabilities for different outcomes. Give your answers to 3 decimal places.

Outcome	Experimental Probability	Theoretical Probability
2	0.217	0.222
0	0.117	0.167
5	0.067	0.056
1	0.317	0.278
3 or 4	0.283	0.278
Less than 2	0.433	0.444

**(e)**

Compare the experimental and theoretical probabilities. What do you notice?

e.g. The experimental probabilities are very similar to the theoretical probabilities, but not exactly the same