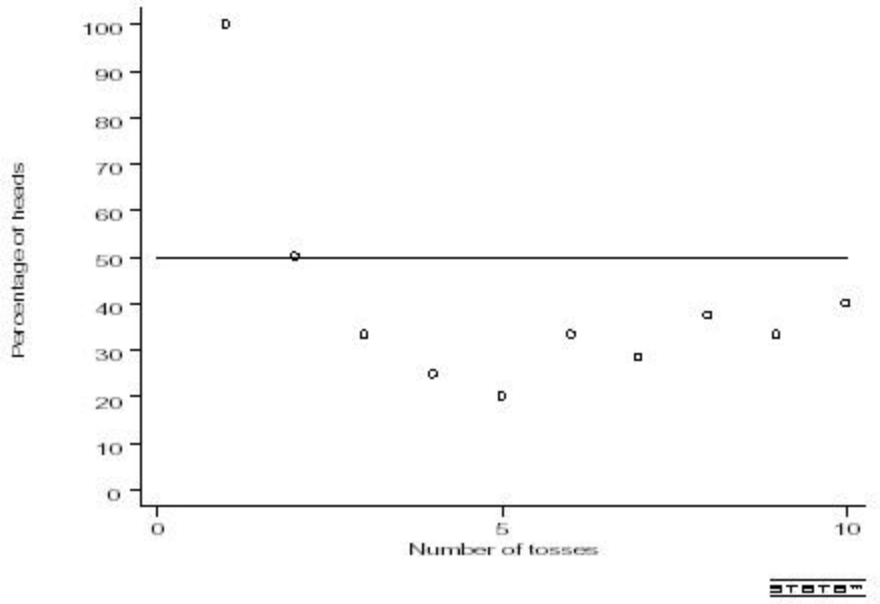
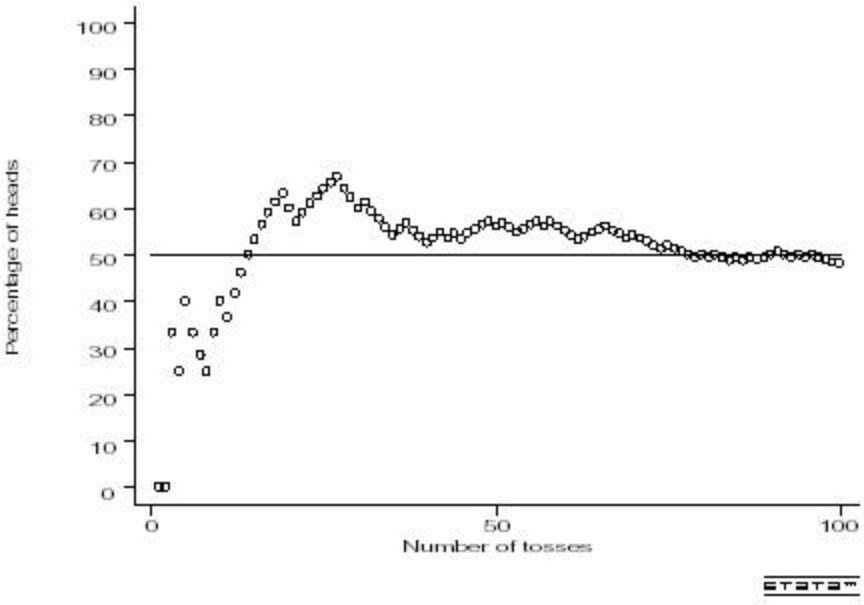
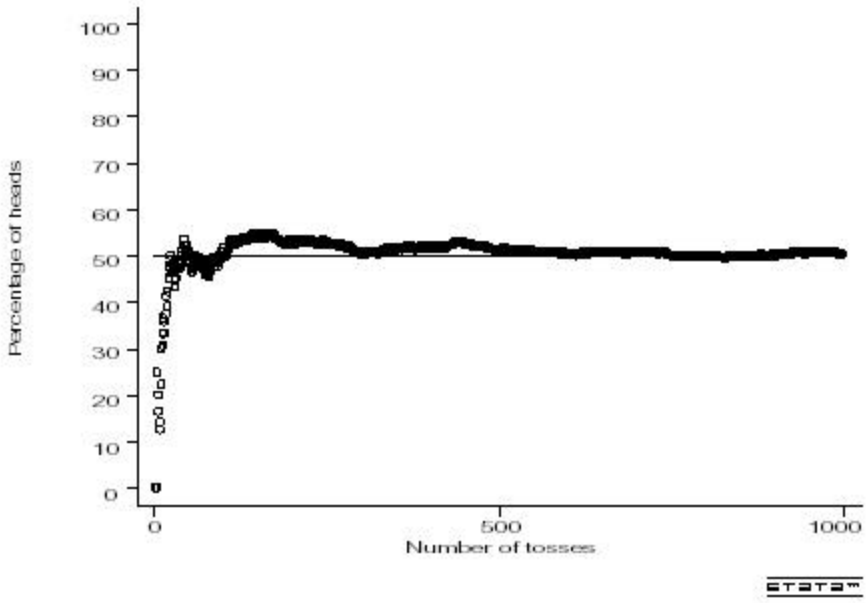
A graph of 10 tosses of a coin



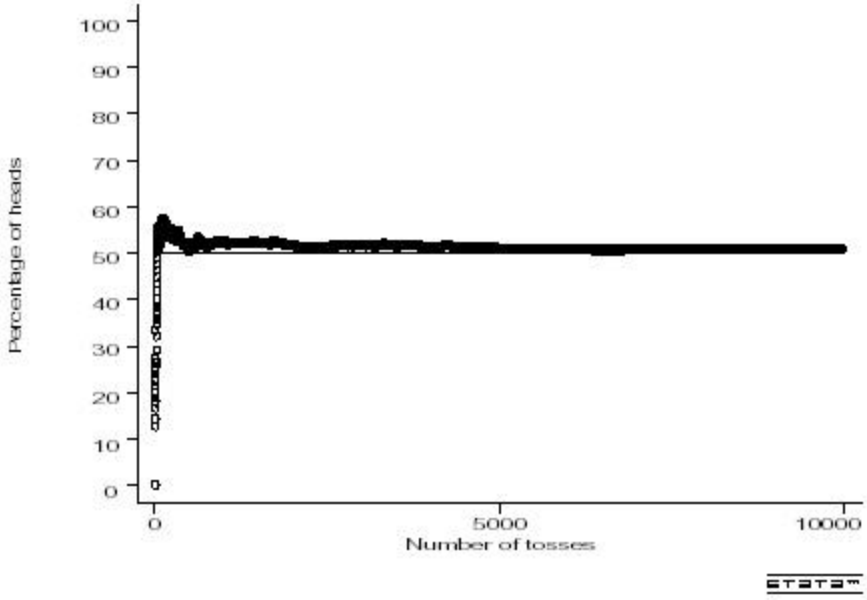
A graph of 100 tosses



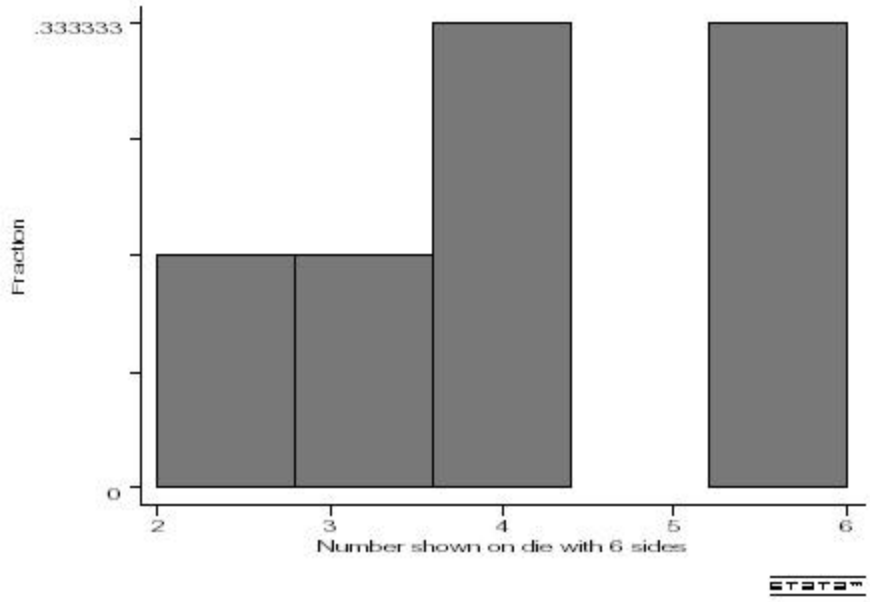
A graph of 1,000 tosses of a coin



A graph of 10,000 tosses of a coin, like the Chapter 16 example:

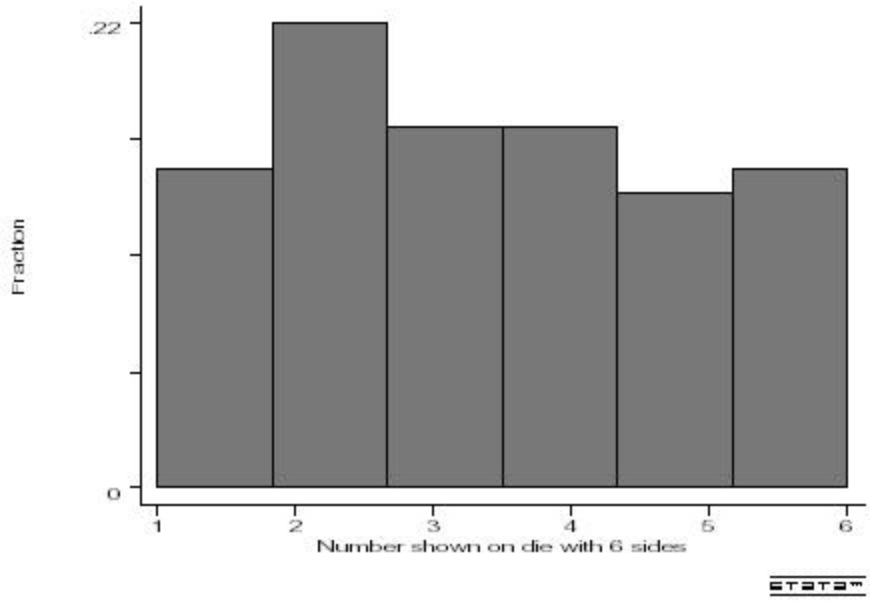


How about a single die, suppose we roll it 6 times, what do you expect to happen?



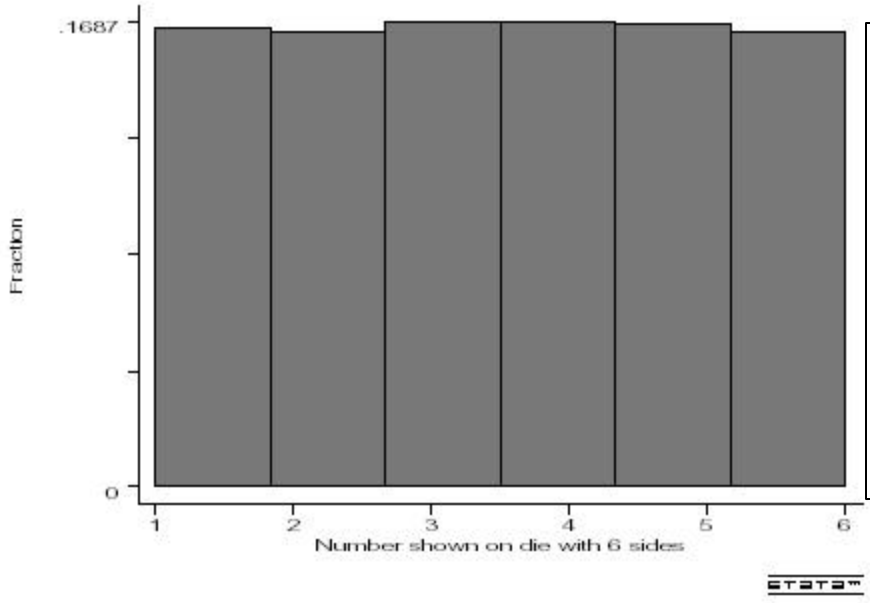
Number shown on die with 6 sides	Freq.	Percent
2	1	16.67
3	1	16.67
4	2	33.33
6	2	33.33
Total	6	100.00

And if we rolled a single die 100 times? What would you expect?



Number shown on die with 6 sides	Freq.	Percent
1	15	15.00
2	22	22.00
3	17	17.00
4	17	17.00
5	14	14.00
6	15	15.00
Total	100	100.00

And what do you think happens if we were to roll it 100,000 times? (Guess and then look at the next page)

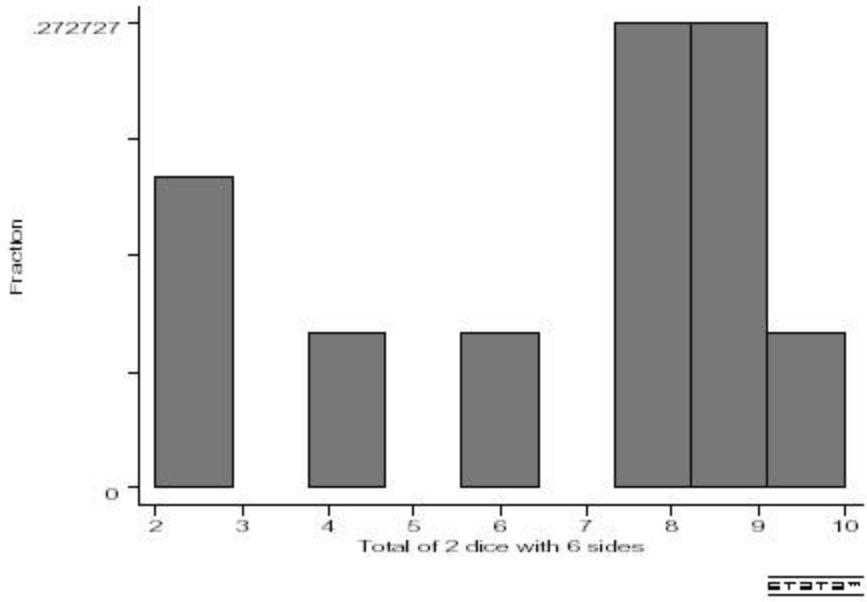


Number shown on die with 6 sides	Freq.	Percent
1	16575	16.58
2	16750	16.75
3	16475	16.48
4	16636	16.64
5	16687	16.69
6	16877	16.88
Total	100000	100.00

The game of "craps" in Las Vegas involves rolling 2 die simultaneously. What are the possible outcomes?

2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

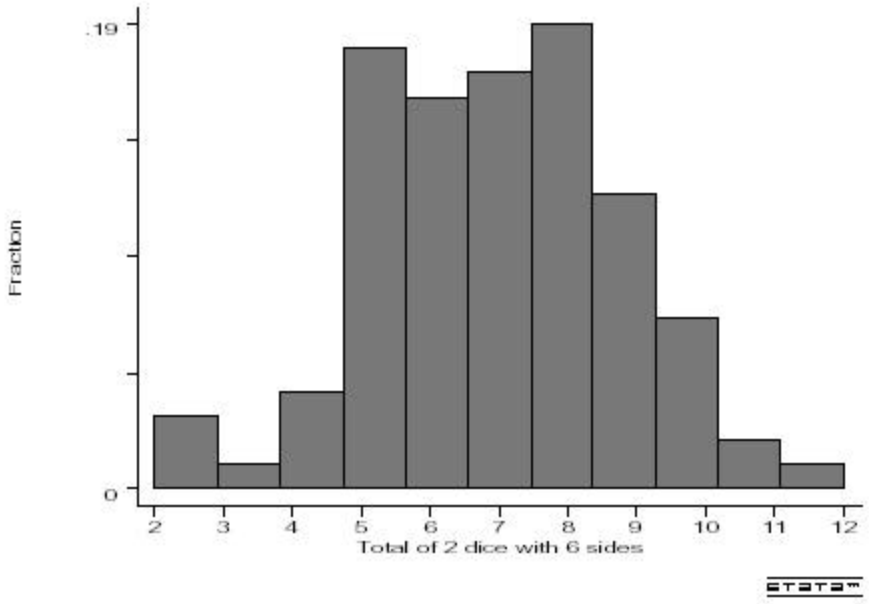
There are 11 possible outcomes. What if I were to roll 2 die 11 times, what would we expect to see?



Total of 2 dice with 6 sides	Freq.	Percent
2	2	18.18
4	1	9.09
6	1	9.09
8	3	27.27
9	3	27.27
10	1	9.09
Total	11	100.00

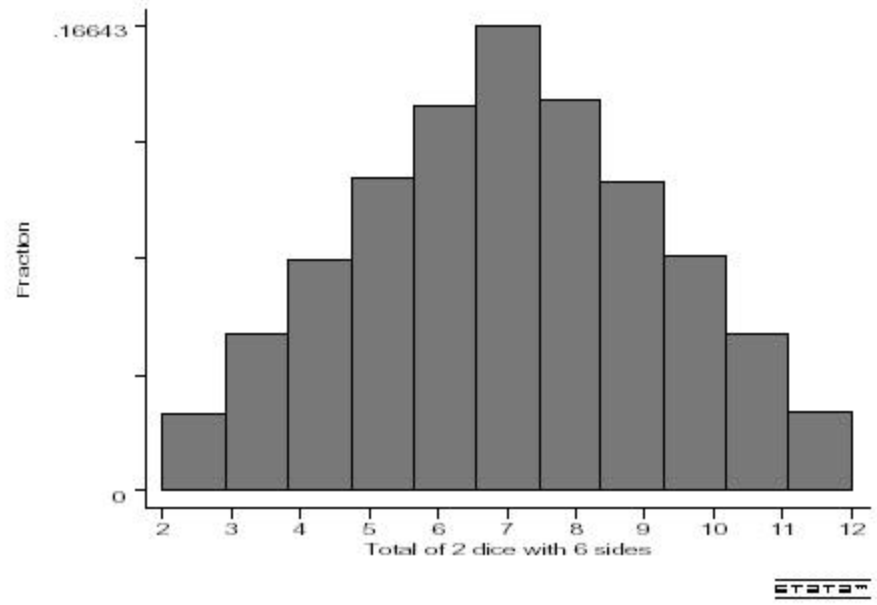
And what if we rolled 100 times? Or 100,000 times (the typical number of rolls in single night in a busy casino in Las Vegas)

100 Rolls of 2 die



Total of 2 dice with 6 sides	Freq.	Percent
2	3	3.00
3	1	1.00
4	4	4.00
5	18	18.00
6	16	16.00
7	17	17.00
8	19	19.00
9	12	12.00
10	7	7.00
11	2	2.00
12	1	1.00
Total	100	100.00

And 100,000 times?



Total of 2 ice with 6 sides	Freq.	Percent
2	2765	2.76
3	5587	5.59
4	8280	8.28
5	11139	11.14
6	13761	13.76
7	16643	16.64
8	13928	13.93
9	11059	11.06
10	8421	8.42
11	5591	5.59
12	2826	2.83
Total	100000	100.00

Take note -- where have you seen something that looks a little bit like this before?