<u>MONTY HALL ANALYSIS</u>

In five of my statistics classes, 101 pairs (or teams) of students each played 18 rounds of the Monty Hall game. If X represents the number of "wins" among the 18 rounds played under the "switching strategy," then $X \sim \text{Bin}\left(n = 18,\ p = \frac{2}{3}\right)$.

Let's compare the theoretical binomial probabilities for the possible numbers of wins with the relative frequencies that we obtained for our 101 teams.

<u>Note</u>: I wish that we had many more than 101 teams; then, the correspondences may have been more impressive!

# of wins, x	$P(x)$	Relative frequencies	Frequencies
0	0+	0	0
1	0+	0	0
2	0+	0	0
3	0+	0	0
4	0+	0	0
5	.001	0	0
6	.003	0	0
7	.011	.010	1
8	.029	.079	8
9	.064	.079	8
10	.116	.129	13
11	.168	.188	19
12	.196	.149	15
13	.181	.149	15
14	.129	.109	11
15	.069	.089	9
16	.026	.020	2
17	.006	0	0
18	.001	0	0

In Section 11-2, we will discuss goodness-of-fit tests that will allow us to test the viability of the binomial distribution above as a "feasible match" for the observed relative frequencies.