

Simulation and Statistical Exploration of Data (Let's Make a Deal – The Monty Hall Problem), using the new ClassPad300-technology

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Statement of the Problem

The **Monty Hall problem** involves a classical game show situation and is named after Monty Hall*), the long-time host of the TV game show *Let's Make a Deal*. There are three doors labeled 1, 2, and 3. A car is behind one of the doors, while goats are behind the other two:



The rules are as follows:

1. The player selects a door.
2. The host selects a different door and opens it.
3. The host gives the player the option of switching from the original choice to the remaining closed door.
4. The door finally selected by the player is opened and he either wins or loses.

By the help of the **ClassPad300** we will simulate N (say $N=100$) such game show situations to see, if the option of switching the door is a good or a bad option to improve the chance to win. The experiments help our students better to understand the randomness and the statistic methods of every day life.

*) **Monty Hall** was born on August 25, 1924 in Canada. Hall attended the University of Manitoba, graduating in 1945, and served in the Canadian Army during World War II. He immigrated to the United States in 1955, and for the next few years worked in radio and television for the NBC and CBS networks. In 1963, Hall began as emcee for the game show *Let's Make a Deal*, the role that would make him famous. Except for brief interruptions, *Let's Make a Deal* ran on various US television networks for the next 23 years. The show was notorious for the outrageous costumes of the contestants.

In addition to his show business fame, Monty Hall is now immortalized for the probability problem that bears his name. The controversy concerning the problem began with a column by Marilyn Vos Savant in the Sunday newspaper supplement *Parade*.

Marilyn Vos Savant has been listed in the *Guinness Book of World Records* Hall of Fame for her IQ score of 228. She is the author of the popular column "Ask Marilyn" in *Parade* magazine. Her column appears in over 350 newspapers, with a circulation of approximately 36 million, and a total readership of approximately 70 million. To students of probability, Marilyn is best known for her analysis of the Monty Hall problem, named for the television game show host Monty Hall. Over the years, she has analyzed a number of other mathematical (and probabilistic) problems as well.

References:

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