The Monty Hall Problem. Monty Hall was a host of a game show on television called Let's Make a Deal. In the game, a contestant would be presented with three doors, behind which were prizes. Two of the prizes were nice and one was spectacular. The contestant would begin by selecting a door. Monty would respond by showing a prize behind one of the two doors that was not selected. In order to keep things interesting, Monty would never show the spectacular prize.

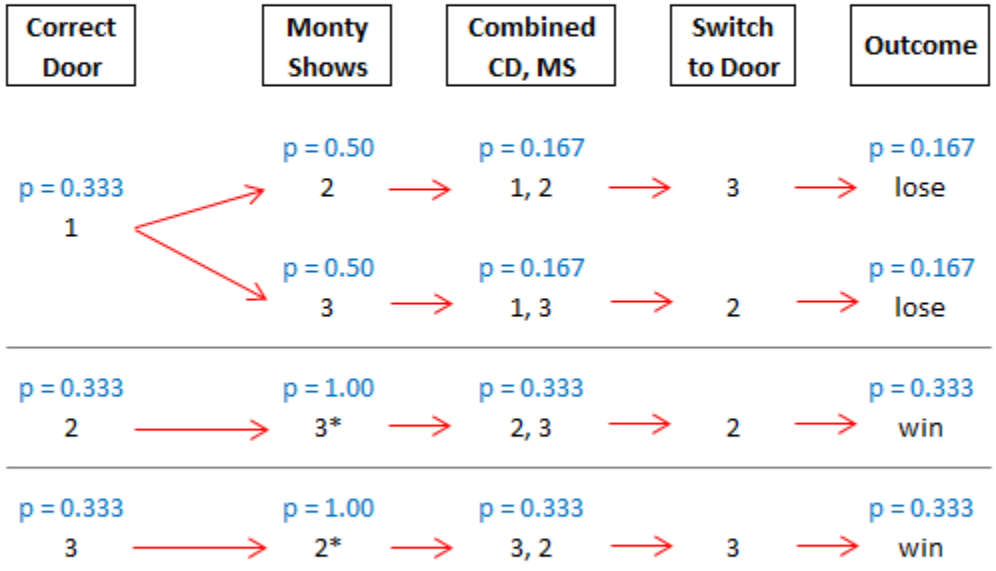
The contestant was then asked (after a commercial break) whether they wanted to keep the door that they had selected or switch to the other door. Assume the player wants to win the spectacular prize. Which option should the player select, or doesn't it matter? Explain. (Hint: Draw a probability tree.)

Solution: **The contestant should switch doors. Here's why:**

Monty Hall Problem

For simplicity, I always pick Door Number 1
After I pick, Monty shows what is behind a different door.
Strategy: switch doors after Monty shows you one

Development of Theoretical Probabilities



* Monty cannot show what is behind Door Number 1 because that is the door that I picked.

Final Probabilities

Lose:	p = 0.333
Win:	p = 0.667