# 4.4 Game : a Card trick using Monty Hall!

**Exercise 1 — Recall the Monty Hall dilemma.**

1. Complete the probability tree.

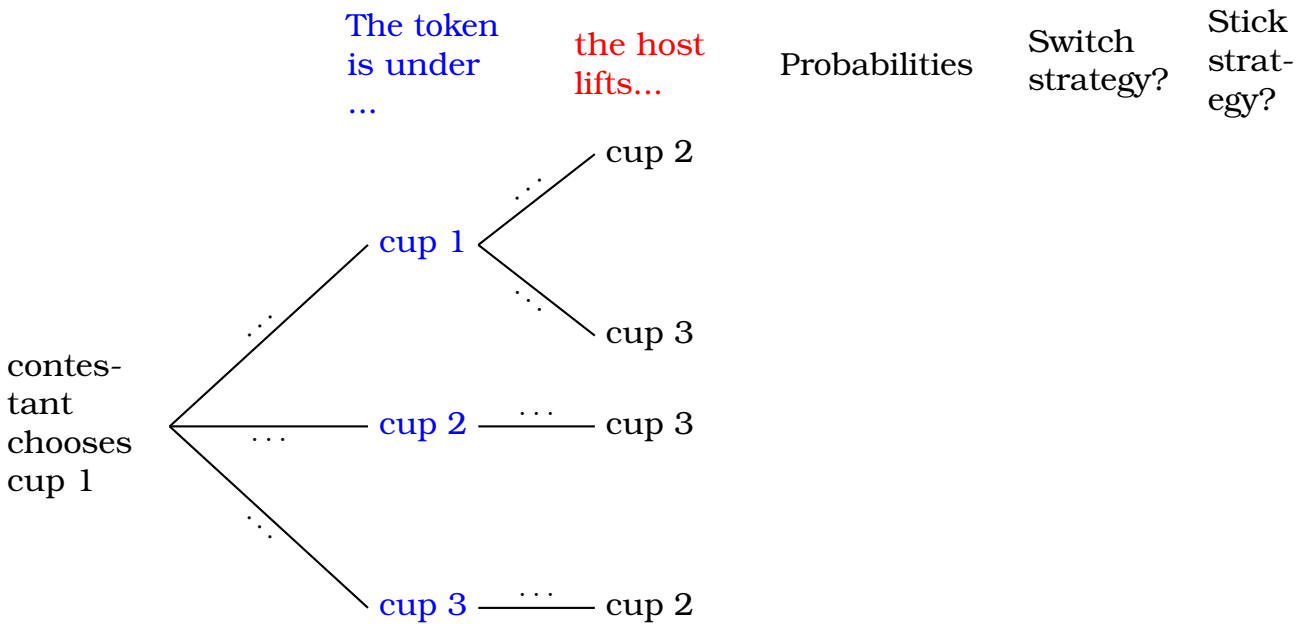


**Figure 4.1:** Tree diagramm assuming the token is hidden under cup 1.

2. Fill in the blanks and compare the probabilities of winning if you switch or stick.

   If player B always switched, he will only lose if Cup 1 actually covered the sweet. Since this happens with probbility ____, a switching strategy will only lose ____ of the time.

**Exercise 2 — a New Monty Hall Variation!.**

1. Let's watch `https://youtu.be/v0SOG3tYEbM` together.
2. How many cards are dealt by player A? How many are chosen by player B?

3. What cards are revealed by player A? Did he know where the Ace was?

4. The trick is designed to people who already know the Monty hall problem. Those would assume that switching cards is the better strategy.

   Draw the Tree Diagramm for this card game, and compare the probabilities of winning if you switch or stick.