You are on a game show and given the choice of whatever is behind three doors. Behind one door is a fantastic prize (some examples use a car, others use cash) while behind the other two doors is a dud (some examples say a goat, others say it's just empty). You pick a door. Then the host opens one of the other two doors to reveal a dud. But here's the wrinkle: the host now gives you the opportunity to switch your door. What should you do?

Write up some notes on this problem, including how you think Bayes' Rule might apply. Drop a link to your notes below and discuss it with your mentor.

Before the host tells me, the probability for me to open the door is 1/3 for each. However, After I know the other door is a dud, the probability of my door and the unopen door become ½ for each. It is like picking a red ball from a bag of red and blue balls. If there are two red balls and one blue ball, the probability for me to pick up a blue ball is 1/3 at first. However, after I already pick a red ball from the bag, the probability for me to pick a blue ball next time is the same as red ball, which becomes ½.