Mathematical Expression for Probability in Monty Hall Problem for N doors and K doors opened by host:

Given N doors the probability of choosing the door with a car is 1/N.
Hence **the probability of winning the car if the player chooses to stick is 1/N,** as this doesn't change anything.

We know that the probability that the car is present is any door other than the one we chose is N-1/N. Since k doors without the car are opened by the host and the probability of the car being present in any of the remaining N-K-1 doors is 1/N-K-1,
The probability of winning the car upon switching is the probability of not having the car on the initial choice times the probability of picking it from the N-K-1 doors which is **(N-1/N)*(1/N-K-1).**