MontyHall(n doors, k revealed)

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1 n doors, k are revealed

We have n doors, with a car behind 1 of them. The probability of choosing the door with the car behind it on first pick is $\frac{1}{n}$.

Monty reveals k doors, all revealed doors are goats so $0 \leq k \leq n-2$ The probability of picking the car if you choose a different door, is the probability of not having picked the car in initial choice times the probability of picking it now .

P(not picking in initial choice) $=\frac{n-1}{n}$

P(picking the cardoor after switching) = $\frac{1}{n-k-1}$(k revealed , 1 is players initial choice)

Total probability = $\frac{n-1}{n} . \frac{1}{n-k-1}$

When no doors are revealed (k=0) its value is $\frac{1}{n}$.

When n-2 doors are revealed its values if $\frac{n-1}{n}$, which is maximum.