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Problem 4 Vertical: Parking lot problem

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Problem 4: Parking lot problem

3/3 points (graded)

Mary and Tom park their cars in an empty parking lot with $n \geq 2$ consecutive parking spaces (i.e, n spaces in a row, where only one car fits in each space). Mary and Tom pick parking spaces at random. (All pairs of parking spaces are equally likely.) What is the probability that there is at most one empty parking space between them? (Express your answer using standard notation .)

$(2*n - 3)*2 / ((n-1)*n)$



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DISCUSSION

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Probability formula that does not work for case $n=2$

discussion posted 8 days ago by **MladenZecevic**

I have a formula that seems to work for all the cases but $n=2$. Did anyone else run into this issue? Any ideas?

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7 days ago



I don't think so. I believe there exists a unique solution that works for all cases as long as $n \geq 2$.

papastauf

7 days ago



Bear in mind that $0! = 1$

I have got the solution, which works for $n \geq 2$



posted 7 days ago by **arkadyryabinin**

In case $n=2$, probability = 1, because all permutations of cars are true. What probability do you have for $n=2$?



posted 7 days ago by **adolmatov**

Ziedbc Staff

6 days ago



The solution should work for all $n \geq 2$

Mark S

6 days ago



I too had a problem. I computed a series adjusting for upper and lower bound, but it did not work for $n=2$. I ended up building a table with n (remember it starts at 2), outcomes and sample space (sample space might exclude impossible possibilities), and "good" outcomes. From this table I created a workable series. Strictly speaking, factorial was NOT needed, indeed we have not covered it nor have we used it. My solution was a correct one.

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