Kevin v Kunal Lewis Carroll problem

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At root

0 Q (H): A bag contains one counter, known to be either white or black with probability 1/2. A white counter is put in, the bag shaken, and a counter drawn out, which proves to be white. What is now the chance of drawing a white counter?

H: 2/3 | D: 1/2

Notes:

Q: Is is true that in there are two possible situations, each 50% likely:

- There are two white counters
- There is one white counter and one black counter

H: Yes | D: Yes

1 Payment: H D None Recurse

Notes:

Q: Is it true that there are only two counters in the bag?

H: Yes | D: Yes

2 Payment: H D None Recurse

Notes:

Q: Is it true that in the 50% chance there are two white counters, there's a 100% chance of pulling out a white counter?

H: Yes | D: Yes

4 Payment: H D None Recurse

Notes:

Q: Isn't it true that the probability of the remaining counter being black or white, is 50% as stated by the question?

H: It differs depending on whether this is before or after you witness taking out a white counter | D: Yes

3 Payment: H D None Recurse

Notes: The counter in the bag has a probability of being white or black with 1/2 chance.

Q: Is is true that in the 50% chance there is 1 white counter and 1 black counter, there is a 50% chance of pulling out a black counter?

H: Yes | D: Yes

6 Payment: H D None Recurse

Q: Isn't it true that the act of putting a white counter in, doesn't change the probability of the remaining counter's identity?

H: Yes | D: Yes

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9 To: 3 .question

H: Is the probability you are referring to the probability *before* taking a white counter out, or *after* you see you took out a white counter?

D: Either situation

Notes

Q If it is twice as likely to pull out a white counter in the first scenario than in the second, is it more likely that given you see a white counter, you are in the first scenario where there's another white counter?

H Yes

D Unclear

7 Payment: H D None Recurse

Notes First scenario = 2 white
Second = 1 white 1 black

5 Payment: H D None Recurse

Notes

Q If you put in an object of a class and take out another object of that class, does that change the overall distribution of the classes?

H It's not clear because you're randomly selecting the final removal

D No

8 Payment: H D None Recurse

Notes Kevin means by randomly selecting the final removal, you're not taking into account the worlds where the outcome is that you pull out a black counter.