Beth:H Mark:D tokens

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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: Mark is assumed to have executed a successful looping strategy and exhausted all but the last layer of recursion, so this debate will not include any recursion but will be a H victory if it is judged a draw

Q: What are the two possibilities for what was in the bag before you drew a counter?

H: Two white counters, or one white counter and one black counter

D: 2 white counters, 1 white 1 black

7 Payment: H D None Recurse

Notes:

Q: If a white counter is put in and a white counter is taken out, is all that remains in the bag the orignal counter?

H: Not necessarily, it may be the original counter that was taken out, in which case you now know that the original counter is white

D: Yes

2 Payment: H D None Recurse

Notes:

Q: If you don't know which of these two bags you have, and you draw a random counter and it turns out to be white, which bag is it more likely you had?

H: It's more likely you had the one with two white counters

D: Both bags have white counters, so drawing a white counter doesn't give you this information. If you drew two white counters, then you would know, but with only one counter you're

8 Payment: H D None Recurse

Notes:

Q: Is the original counter white with probability 1/2?

H: At the beginning, before you get any more information about which bag you have, yes

D: Yes

3 Payment: H D None Recurse

Notes:

Q Given it's more likely you had the bag with two white counters, is it more likely the remaining counter is white?

H Yes D No

9 Payment: H D None Recurse

Notes