0 Question: 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?

A1: 1/2

A2: 2/3

Arguments for A1

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

A1: Yes

A2: Yes

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

A1: Yes

A2: It differs depending on whether this is before or after you witness taking out a white counter

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

A1: Yes

A2: Yes

8 Question: 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?

A1: No

A2: It's not clear because you're randomly selecting the final removal

Arguments for A2

1 Question: 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

A1: Yes

A2: Yes

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

A1: Yes

A2: Yes

6 Question: 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?

A1: Yes

A2: Yes

7 Question: 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?

A1: Unclear

A2: Yes