

Generate 5 different questions from original question.

Add *unusual conditions* to the given original question.

Double check it's valid, different from original, and solvable.



[Original Question]



Before the card is revealed, Alice must guess the color of cards, where 3 red and 3 black will be given in random order. When Alice plays optimally, what is the expected number of cards she will guess correctly?



Modif 1: **♣** × 1



Modif 2: \bigstar x(-3) \bigstar x 3







Analyze question with yes or no

(1) valid? (2) different from the original? (3) solvable without error?



--→[Modified Question]



Alice knows that only 1 red card will be revealed to her. Before the card is revealed, Alice must guess its color. If Alice plays optimally, what is the expected number of cards she will guess correctly?

(correct reasoning)

She already knows it's red, so expected number is 1.

(incorrect reasoning)

Wait.. It's so trivial, maybe I'm missing something here.

Are there two cards?

(correct reasoning)

Wait, let me think again. Then obviously answer is 1.

(incorrect reasoning)

Let's assume it is two-cards problem.



1 (red is fixed) + $\frac{1}{2}$ (black or red?) = $\frac{3}{2}$

Wrong Answer



1 (only one red card will be revealed)

Correct Answer