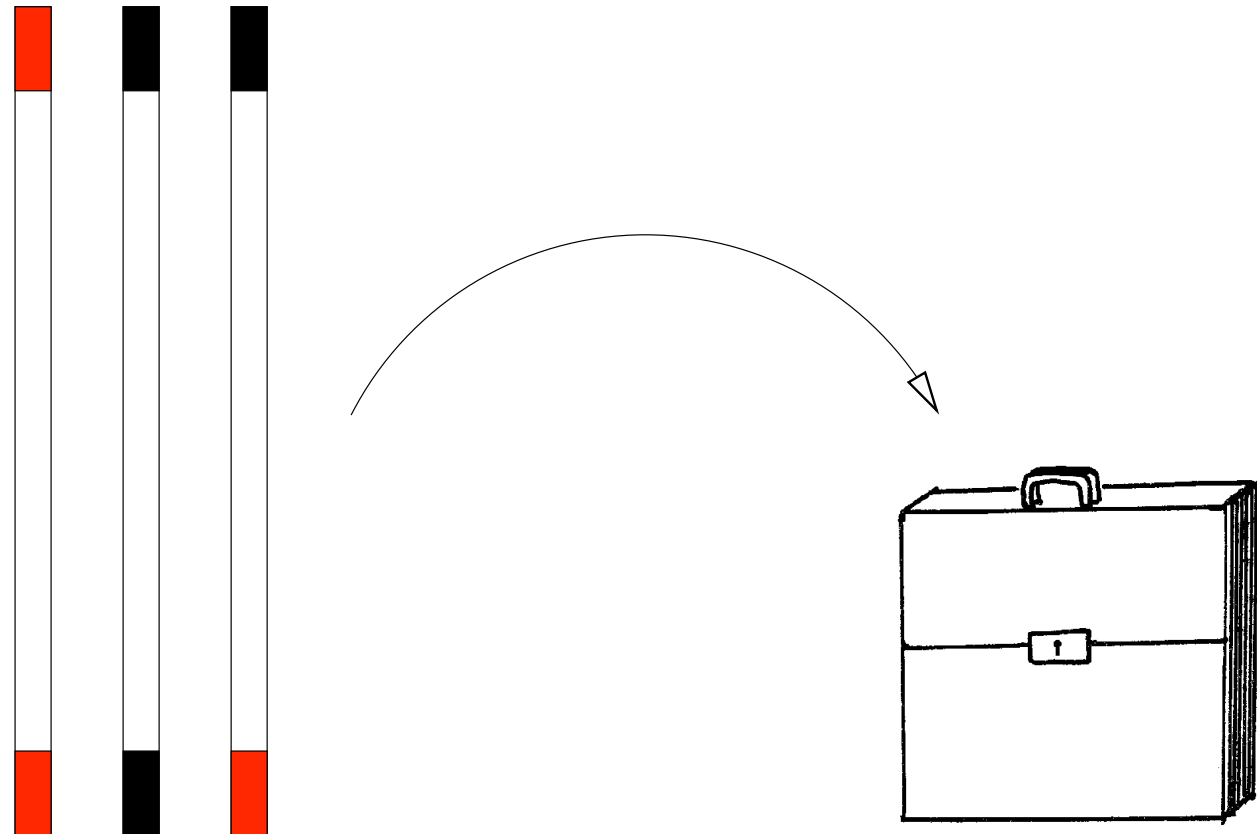# Three sticks in a bag...

Take three sticks which have their ends colored and place them in a bag. The first stick has two red ends, the second has two black ends and the third stick has a red and a black end.
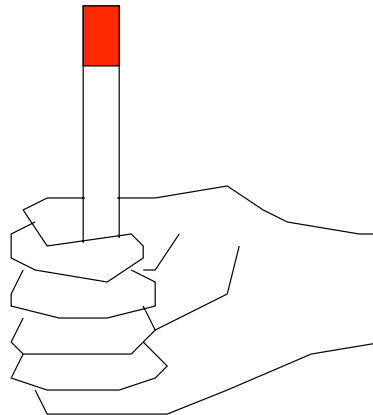
Take three sticks which have their ends colored and place them in a bag. The first stick has two red ends, the second has two black ends and the third stick has a red and a black end.

Now, reach into this bag (no peeking) and grasp one of the sticks by an end so that the other end is showing and pull the stick out. Say that a red end is showing.

What color is most likely clasped in your fist?

Take three sticks which have their ends colored and place them in a bag. The first stick has two red ends, the second has two black ends and the third stick has a red and a black end.

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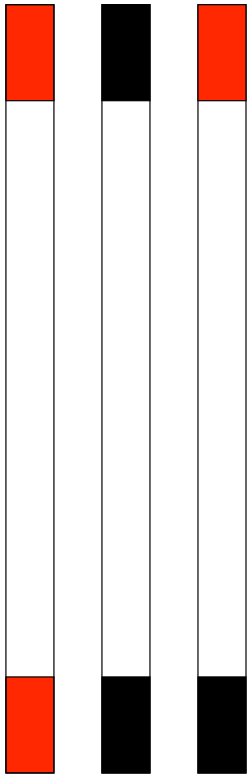
What color is most likely clasped in your fist?
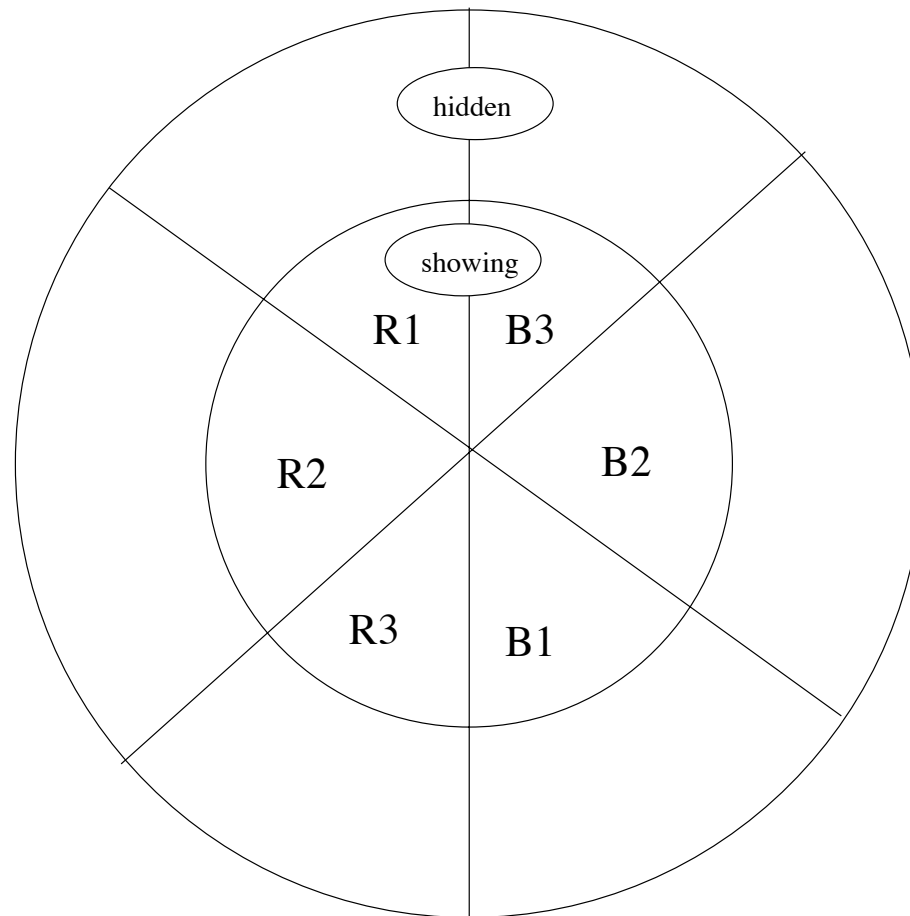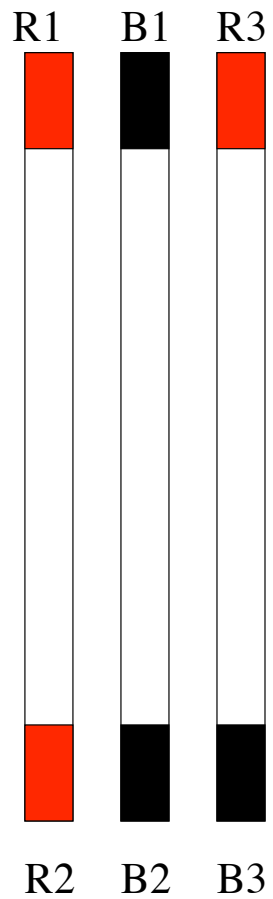
Is the answer?

A) red
B) black
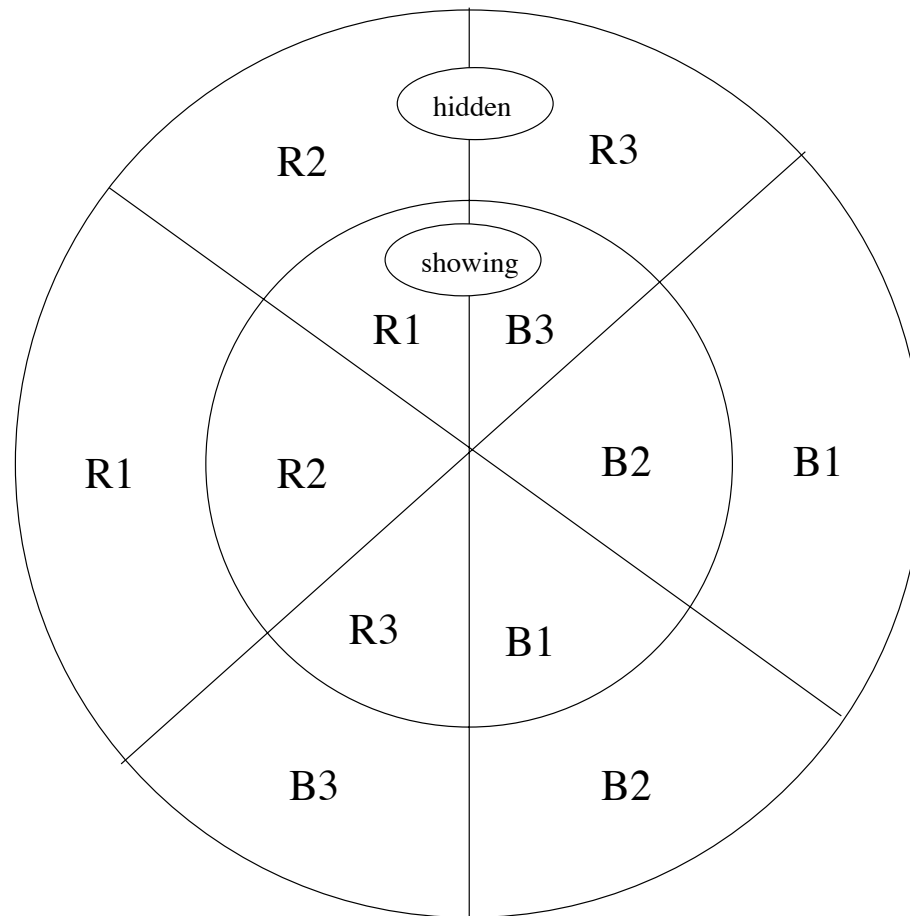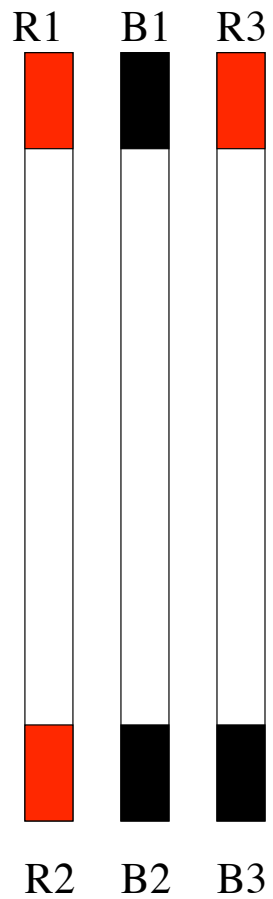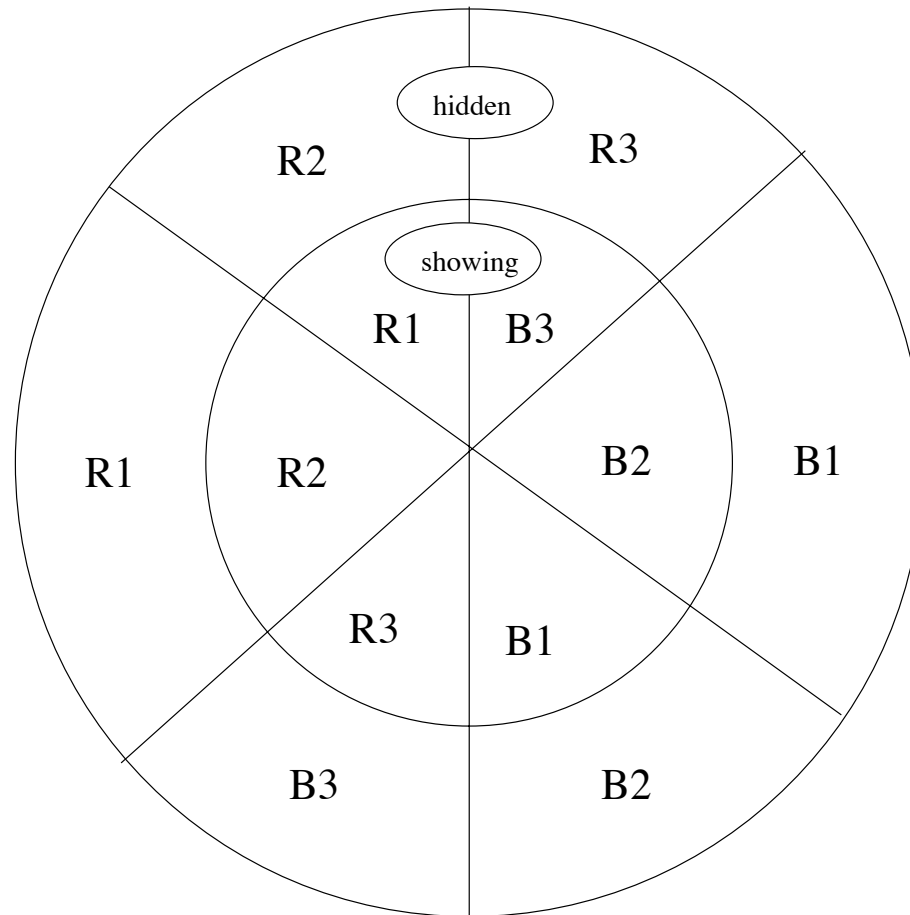C) red/black are equally likely
D) don't know/care
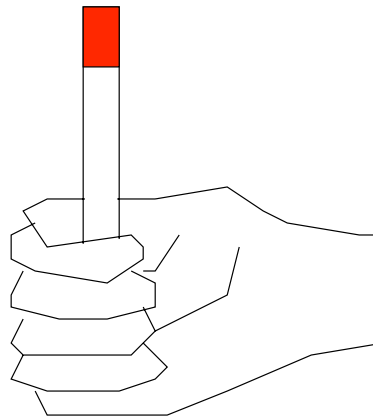
Let's analyze this problem. Look at the 3 sticks again:
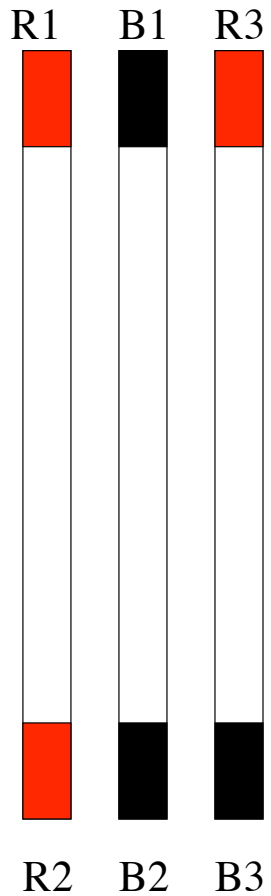
Let's analyze this problem. Look at the 3 sticks again:

R1   B1   R3

R2   B2   B3

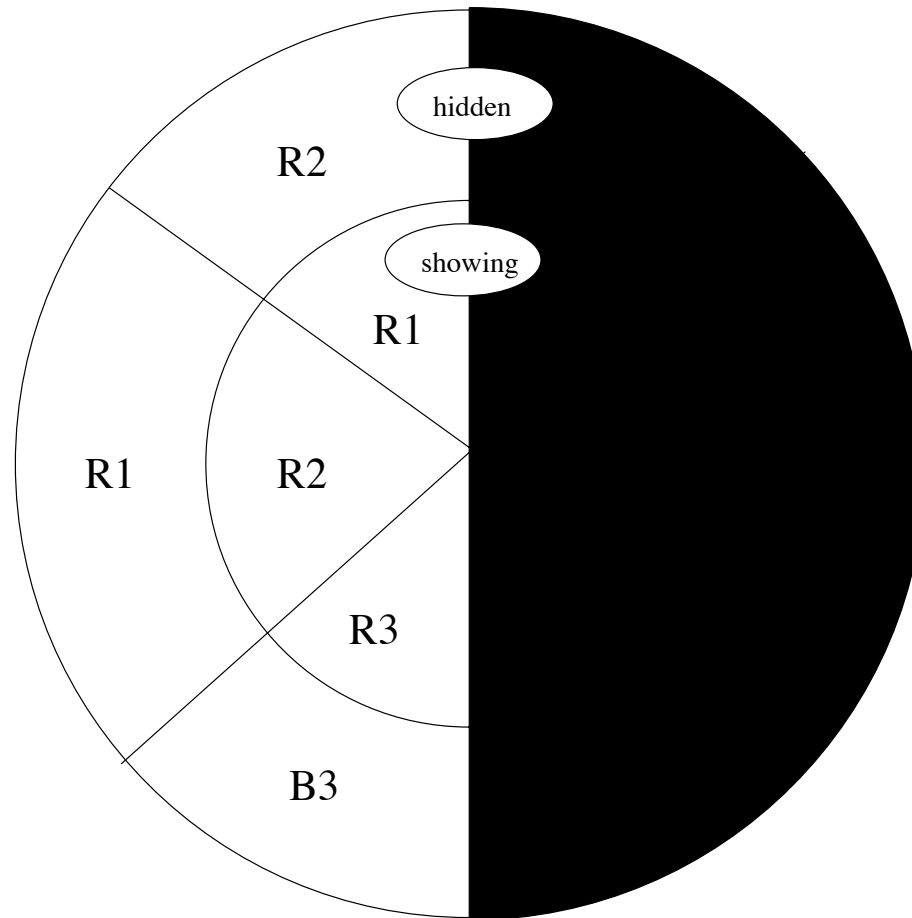hidden

showing

R1   B3

R2   B2

R3   B1

Let's analyze this problem. Look at the 3 sticks again:

R1   B1   R3

R2   B2   B3

hidden

R2   R3

showing

R1   B3

R1   R2   B2   B1

R3   B1

B3   B2

Let's analyze this problem. Look at the 3 sticks again:

R1   B1   R3

R2   B2   B3

hidden

R2   R3

showing

R1   B3

R1   R2   B2   B1

R3   B1

B3   B2

We are calculating the probability that a red or black is hidden GIVEN that a red is showing...

Let's analyze this problem. Look at the 3 sticks again:
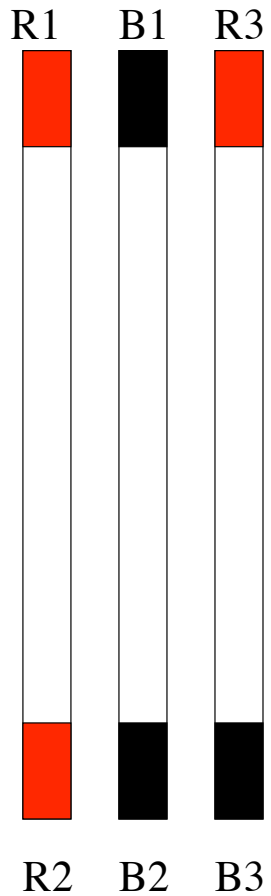
R1   B1   R3

hidden

R2

showing

R1

R1   R2

R3

B3

R2   B2   B3

We are calculating the probability that a red or black is hidden GIVEN
that a red is showing...

Looking at the wheel we see that 2/3 of the time a red end will be hidden and 1/3 of the time a black end will be hidden given that a red end is showing.

R1 B1 R3

R2 B2 B3

hidden

showing

R2

R1

R1   R2

R3

B3

We are calculating the probability that a red or black is hidden GIVEN that a red is showing...