

NAME: _____

P.I. A.S.22: Determine, based on calculated probability of a set of events, if some or all are equally likely to occur, or one is more likely to occur than another

P.I. A.S.23: Calculate the probability of a series of independent events, and a series of dependent events

1. In a game, you choose a card from a box containing 4 red cards, 6 blue cards, and 5 yellow cards. You do not replace the first card in the box before choosing again. What is the probability of choosing a blue card and then choosing a yellow card?

[A] $\frac{5}{2}$ [B] $\frac{1}{5}$ [C] $\frac{5}{21}$ [D] $\frac{5}{42}$

3. A bag contains 5 white marbles and 1 yellow marbles. Two marbles are drawn at random. One marble is drawn and not replaced. Then a second marble is drawn. What is the probability that the first marble is yellow and the second one is white?

[A] $\frac{1}{6}$ [B] 1 [C] $\frac{1}{5}$ [D] $\frac{1}{30}$

4. A drawer contains 5 red socks, 7 white socks, and 4 blue socks. Without looking, you draw out a sock and then draw out a second sock without returning the first sock. What is the probability that the first sock and the second sock are both red?

[A] $\frac{1}{16}$ [B] $\frac{1}{20}$ [C] $\frac{1}{12}$ [D] $\frac{25}{256}$

5. Four cards are drawn at random without replacement from a standard deck of 52 cards. Find P(4 diamonds).

[A] $\frac{1}{256}$ [B] $\frac{11}{4,165}$ [C] $\frac{4}{13}$ [D] $\frac{1}{13}$

6. Compare the quantities in Column A and Column B.

Column A

$P(B)$ if A and B are independent,

$P(A \text{ and } B) = \frac{1}{4}$, and $P(A) = \frac{1}{2}$.

Column B

$P(B \text{ after } A)$ if A and B are dependent,

$P(A) = \frac{1}{2}$.

[A] The quantity in Column A is greater.

[B] The quantity in Column B is greater.

[C] The quantities are equal.

[D] The relationship cannot be determined from the information given.

[1] $\frac{1}{7}$ _____

[2] C _____

[3] A _____

[4] C _____

[5] B _____

[6] D _____