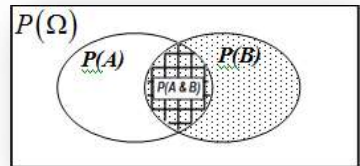


Conditional Probability- Additional Practice

P(A | B) asks that we find the probability of A given that we know B has or already occurred. Using a formula find the probability of A given B can be found using $P(A | B) = \frac{P(A \text{ and } B)}{P(B)}$



Directions- Leave answers in simplified fraction form and decimals rounded to the nearest hundredth.

1. Determine the following **conditional** probabilities.

Consider a bag with marbles, 3 blue marbles, 2 red marbles, and 5 green marbles. Three marbles are drawn in sequence and are taken **without replacement**.



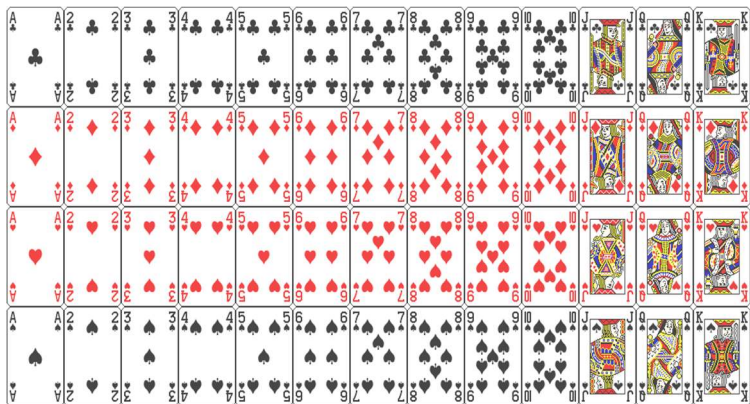
i. $P(2^{\text{nd}} \text{ draw: blue} | 1^{\text{st}} \text{ draw: red}) =$

ii. $P(2^{\text{nd}} \text{ draw: blue} | 1^{\text{st}} \text{ draw: blue}) =$

iii. $P(3^{\text{rd}} \text{ draw: blue} | 1^{\text{st}} \text{ draw: red, } 2^{\text{nd}} \text{ draw: blue}) =$

ii. $P(1^{\text{st}} \text{ draw: blue} | 1^{\text{st}} \text{ draw: red}) =$

2. Determine the following **conditional** probabilities. Consider drawing 1 card from a standard deck of shuffled cards:



i. $P(\text{Queen} | \text{Face Card}) =$

ii. $P(\text{Ace} | \text{Lettered Card}) =$

iii. $P(\text{Heart with a Number} | \text{Red Card}) =$

3. Consider the following table with information about all of the students taking Statistics at Phoenix High School.

a. $P(\text{Full-time} | \text{Male}) =$

c. $P(\text{Female} | \text{Part-time}) =$

	Full-time	Part-time	Total
Female	28	15	43
Male	12	16	28
Total	40	31	71

b. $P(\text{Male} | \text{Full-time}) =$

d. $P(\text{Full-time} | \text{Part-time}) =$

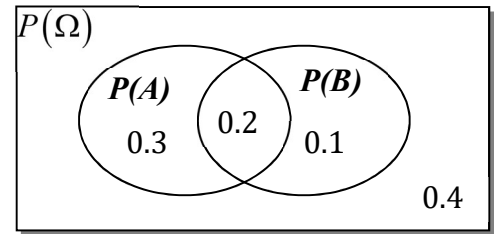
4. Given the following VENN Diagram answer the following.

a. $P(A | B) =$

c. $P(B | A) =$

b. $P(A | B') =$

d. $P(B | A') =$



5. Given the $P(B) = 0.6$ and $P(A | B) = 0.2$, determine the $P(A \text{ and } B)$.

6. Given the VENN Diagram and $P(A) = 0.8$ and $P(B | A) = 0.3$

a. Determine the $P(A \text{ and } B)$

b. Determine the $P(B)$

c. Determine the $P(B' \cap A)$

d. Determine the $P((A \cup B)')$

