

PROBLEM SET 12-1A
(Probability of Multiple Events)

1. Suppose you have five books in your book bag. Three are novels, one is a biography and one is a poetry book. Today you grab one book out of your bag without looking and return it later. Tomorrow you do the same thing. What is the probability that you grab a novel both days?

2. At a picnic, there are 10 diet drinks and 5 regular drinks. There are also 8 bags of fat free chips and 12 bags of regular chips. You randomly grab a drink and bag of chips. Find the probability that you get a diet drink and fat-free chips.

You have a drawer with five pairs of white socks, three pairs of black socks and one pair of red socks. You choose one pair at random each morning, starting on Monday. The socks you choose are not returned to the drawer. Find the probability of each event:

3. You select black socks on Monday and white socks on Tuesday.
4. You select red socks on Monday and black socks on Tuesday.
5. You select white socks on Monday and Tuesday.

The distribution of blood types for a randomly chosen person in the United States is shown below:

Blood Type	O	A	B	AB
U.S. Probability	.45	.40	.11	.04

6. An individual with type B blood can safely receive blood only from persons with type B or type O blood. What is the probability that the husband of a woman with type B blood is an acceptable blood donor for her?
7. What is the probability that in a randomly chosen couple the wife has type B blood and the husband has type A?
8. What is the probability that one of the randomly chosen couple has type A blood and the other has type B?
9. What is the probability that at least one of a randomly chosen couple has type O blood?

10. A jar contains four blue marbles, two red marbles five green marbles. What is the probability that you randomly choose a blue marble or a red marble?
11. A and B are independent events. If $P(A) = .4$ and $P(B) = .2$, find $P(A \text{ or } B)$.
12. You randomly choose a number from 1 to 10. What is the probability that you choose a multiple of 2 or 3?

A standard die is tossed. Find each probability.

13. $P(3 \text{ or odd})$
14. $P(4 \text{ or even})$
15. $P(\text{even or less than } 4)$
16. $P(\text{odd or greater than } 2)$
17. $P(\text{odd or prime})$
18. $P(4 \text{ or less than } 6)$