

Review Probability

1. A medical researcher needs 7 people to test the effectiveness of an experimental drug. If 19 people have volunteered for the test, in how many ways can 7 people be selected?
 2. How many different 7-letter passwords can be formed from the letters S, T, U, W, X, Y, and Z if no repetition of letters is allowed?
 3. You volunteer to help drive children at a charity event to the zoo, but you can fit only 7 of the 15 children present in your van. How many different groups of 7 children can you drive?
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4. To win at LOTTO in one state, one must correctly select 7 numbers from a collection of 46 numbers (1 through 46). The order in which the selection is made does not matter. How many different selections are possible?
 5. In a race in which six automobiles are entered and there are no ties, in how many ways can the first three finishers come in?
 6. How many ways can you arrange the letters of the phrase DUNKINDONUTS?
 7. This problem involves empirical probability. The table shows the breakdown of 99 thousand single parents on active duty in the U.S. military in a certain year. All numbers are in thousands and rounded to the nearest thousand. Use the data in the table to find the probability that a randomly selected single parent in the U.S. military is a woman in the Air Force.

	Army	Navy	Marine Corps	Air Force	Total
Male	27	25	5	16	73
Female	11	8	1	6	26
Total	38	33	6	22	99

- a. The probability that a randomly selected single parent in the U.S. military is a woman in the Air Force is .
- b. Find the probability of a person being male or in the Navy.
- c. Find the Probability that a person is in the Air Force given they are male.

8. A 7-sided die is rolled. The die's faces are labeled with the numbers 1 through 7, and each number is equally likely to be rolled. Find the probability of rolling an odd number.

What is the probability of rolling an odd number?

9. A single die is rolled twice. Find the probability of rolling a 4 the first time and a 6 the second time.

10. A single die is rolled twice. Find the probability of rolling an odd number the first time and a number greater than 1 the second time.

11. You buy one raffle ticket for \$2.00. There are 250 raffle tickets sold. The prizes are \$100, \$75 and \$50. If you can only win one prize, what is the expected value for your ticket?

12. A cell phone company knows that in NC on average 8% of calls are dropped because of a bad connection. If you make 25 calls this week, what is the probability that:

a. You drop exactly 4 of them?

b. You drop 3 or less calls?

c. You drop at least 3 calls?