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| NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_ | **Prob and Stats** |
| Combinations | **DATE: Tuesday, May 10, 2022** |

Warmup:

Of all voters, 31% are Democrats, 24% are Republicans and 45% are independent/undecided.  Of democrats, 3% would vote for Trump at this point.  Of Republicans 83% would and of undecided 38% would.  If the election were held today, find probability that if you choose a random voter, they would vote for Trump?

You probably have noticed, Mr. Borland doesn’t have too many different clothes.  I have three different colored school pants (dark blue, khaki, and brown) and I have 5 different shirts (flannel, blue, plaid, sweater, and green).

How many different outfits can I put together (make a tree diagram if you need to)?

What is the probability that I will look good?

How many ways can you arrange the letters A,B,C?



1. How many different ways can 4 students be selected from 21 students to each win a different prize?
2. In our class of 14 students, we are going to select 4 students to represent our class at a meeting. How many ways can we do this?
3. There are 9 people on the basketball team, how many different groups of 5 starters are there?

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1. Crooked Miles has 12 different flavors. You are going to order 3 flavors, how many different choices can you make (lets assume order doesn’t matter, so chocolate,vanilla,strawberry is the same as vanilla,chocolate,strawberry)
2. If the NCAA has applications from 6 universities for hosting its intercollegiate tennis championships. There will be championships for both female and male students. How many ways may they select the hosts for these championships
   1. if they are not both to be held at the same university?
   2. if they may both be held at the same university?
3. There are five finalists in the Mr. Deering pageant. In how many ways may the judges choose a winner and a first runner-up?
4. In a primary election, there are four candidates for mayor, five candidates for city treasurer, and two candidates for county attorney. In how many ways may voters mark their ballots if they vote in all three of the races?
5. A multiple-choice test consists of 5 questions, each permitting a choice of 4 answers. In how many ways may a student fill in the answers if they answer each question?
6. In how many ways may can five people line up to get on a bus?
7. A soccer team has 12 players, 8 play at a time, how many different squads could they make? (position doesn’t matter)
8. In Deering’s election 10 students are running. The person with the most votes will be president. Second most will be vice president, third will be secretary. Fourth will be treasurer. .Find how many ways they could be selected.
9. For a segment of a radio show, a disc jockey (Dr. Jams) can play 4 songs. If there are 8 to select from, in how many ways can the program for this segment be arranged?
10. An election ballot asks voters to select three city commissioners from a group of six candidates. In how many ways can this be done?
11. You are going to be put in solitary confinement for a month. You can take 5 books. You have 15 books to choose from. How many different collections of 5 books could you take?

Advanced:

In my class, there are 8 seniors and 6 juniors. How many ways could I select a group of:

1. 4 students?
2. 4 seniors?
3. 4 juniors?

Exceeds:

1. a group of 3 seniors and 1 juniors
2. a group of 2 seniors and 2 juniors