1 Enumerating vs. Counting

1.1 Permutation of Letters

Example: How many words can we make out of the letters A B C using each letter once?

- ABC
- BAC
- CAB
- ACB
- BCA
- CBA

When we list all objects as above we call it **enumeration**, whereas **counting** is only concerned with the total number of objects. If we consider the example above, how many words would be possible for A B C D?

It's best to find a formula, as using it is a very efficient way to count Objects. For $n = 4$ letters we end up with 24 permutations.

The formula for the amount of different words with n letters is $n!$

1.2 Points in Convex Position