Vocabulary: Permutations and Combinations

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**Vocabulary**

* Combination – a collection of objects or values from a set in which the order does not matter.
* The notation *nCr* represents the number of possible combinations of *r* objects from a set of *n* objects.
  + - For example, the combinations of 2 letters that can be chosen from the letters A, B, and C are AB, AC, and BC. Therefore, 3*C*2 = 3.
* Factorial – the product of an integer and all positive integers below it.
* The symbol for factorial is the exclamation point (!).
  + For example, 5! = 5 • 4 • 3 • 2 • 1 = 120.
* By convention, 0! = 1.
* Permutation – a collection of objects or values from a set in which the order matters.
  + The notation *nPr* represents the number of possible permutations of *r* objects from a set of *n* objects.
    - For example, the permutations of 2 letters that can be chosen from the letters A, B, and C are AB, BA, AC, CA, BC, and CB. Therefore, 3*P*2 = 6.