

[10-08-30-21T]
Homework assignment

Each ordered arrangement of the letters A, B, C is called a *permutation* of the letters A, B, C. Thus, [A, B, C] is one permutation and [A, C, B] is another permutation of the letters A, B, C.

- **As you work each of the following, please keep in mind these two goals: (1) we want to find an easily followed procedure that guarantees that every permutation will be produced exactly once, and (2) eventually we want a way to predict the exact number of permutations without having to list each one and count them.**

- **Questions**

- [1] List all permutations of the letter A. How many permutations are there?
- [2] List all permutations of the letters A, B. How many permutations are there?
- [3] List all permutations of the letters A, B, C. How many permutations are there?
- [4] List all permutations of the letters A, B, C, D. How many permutations are there?
- [5] Say how you would predict the number of permutations of A, B, C, D, E. How many are there? Do you see why I did not ask you to list them all?
- [6] How many permutations are there of the ten letters A, B, C, D, E, F, G, H, I, J ? You are welcome to use a calculator.
- [7] Tomorrow in class, we will see if we can state a general rule that will correctly predict the number of permutations of any number of objects.