Multiple Recursion

→ process in which a function makes > 2 recursive calls

→ common example is enumerating various configurations in order to solve a combinatorial puzzle

→ if the # of possible configurations is not too large, we can use an algorithm to consider all possibilities systematically. In general, the algorithm enumerates and tests all k-length sequences w/o repetitions of elements in given universe U.

Build sequences by:

1.) Recursively generating sequences of k-1 elements

2.) Appending each such sequence an element not already in it

```
PuzzleSolve(k, S, U):
  for each e in U
    Add e to end of S
    Remove e from U
    if k==1:
      Test whether S is a config. which solves puzzle
      if S solves puzzle then
        return "Solution " + S
    else
      PuzzleSolve(k-1, S, U)
    Remove e from end of S
    Add e back to U
```