Combination.java

```
1    package Backtracking;
2    import java.util.*;
3    public class Combination {
4        private static int length;
5        public static <T> List<TreeSet<T>> combination(T[] arr, int n) {
6  1        if (n == 0) {
7  1            return null;
8        }
9        length = n;
10       T[] array = arr.clone();
11 1     Arrays.sort(array);
12       List<TreeSet<T>> result = new LinkedList<>();
13 1     backtracking(array, 0, new TreeSet<T>(), result);
14 1     return result;
15     }
16     private static <T> void backtracking(T[] arr, int index, TreeSet<T> currSet, List<TreeSet<T>> result)
17 4       if (index + length - currSet.size() > arr.length) return;
18 2       if (length - 1 == currSet.size()) {
19 2           for (int i = index; i < arr.length; i++) {
20               currSet.add(arr[i]);
21               result.add((TreeSet<T>) currSet.clone());
22               currSet.remove(arr[i]);
23           }
24       }
25 2       for (int i = index; i < arr.length; i++) {
26           currSet.add(arr[i]);
27 2           backtracking(arr, i + 1, currSet, result);
28           currSet.remove(arr[i]);
29       }
30   }
31 }
```

Mutations

6	1. negated conditional → KILLED
7	1. replaced return value with Collections.emptyList for Backtracking/Combination::combination → KILLED
11	1. removed call to java/util/Arrays::sort → SURVIVED
13	1. removed call to Backtracking/Combination::backtracking → KILLED
14	1. replaced return value with Collections.emptyList for Backtracking/Combination::combination → KILLED
17	1. Replaced integer subtraction with addition → KILLED 2. Replaced integer addition with subtraction → SURVIVED 3. negated conditional → KILLED 4. changed conditional boundary → KILLED
18	1. Replaced integer subtraction with addition → KILLED 2. negated conditional → KILLED
19	1. negated conditional → KILLED 2. changed conditional boundary → KILLED
25	1. negated conditional → KILLED 2. changed conditional boundary → KILLED
27	1. removed call to Backtracking/Combination::backtracking → KILLED 2. Replaced integer addition with subtraction → KILLED

Active mutators

- CONDITIONALS_BOUNDARY
- EMPTY_RETURNS
- FALSE_RETURNS
- INCREMENTS
- INVERT_NEGS
- MATH
- NEGATE_CONDITIONALS
- NULL_RETURNS
- PRIMITIVE_RETURNS
- TRUE_RETURNS
- VOID_METHOD_CALLS

Tests examined

- Backtracking.CombinationTest.testLengthTwo(Backtracking.CombinationTest) (0 ms)
- Backtracking.CombinationTest.testLengthOne(Backtracking.CombinationTest) (3 ms)
- Backtracking.CombinationTest.testNoElement(Backtracking.CombinationTest) (0 ms)