

More advanced counting

- What is the number of k -subsets of a set $S = \{s_1, s_2, s_3, \dots, s_n\}$ that do not include s_1 ?
- What is the number of k -subsets of a set $S = \{s_1, s_2, s_3, \dots, s_n\}$ that do include s_1 ?
- What is the number of orderings of the set S in which s_1 and s_2 are not adjacent?
- What is the number of orderings of the set S in which s_1 and s_2 are adjacent?