

**PROBLEM SET 6-7**  
(Permutations and Combinations)

**Evaluate each expression.**

1.  ${}_8P_1$       2.  ${}_8P_2$       3.  ${}_8P_3$       4.  ${}_9P_6$
5.  ${}_6C_2$       6.  ${}_4C_4$       7.  ${}_7C_3$       8.  $\frac{{}_7C_4}{{}_9C_4}$

**Answer the following.**

9. How many different teams of 11 players can be chosen from a soccer squad of 16 players?
10. Suppose you find seven articles related to the topic of your research paper. In how many ways can you choose five articles to read?
11. The prom committee has four sites available for the banquet and three sites for the dance. How many arrangements are possible for the banquet and the dance?
12. How many different nine-player batting orders can be chosen from a baseball squad of 16?
13. For a band camp, you can choose two or three roommates from a group of 25 friends. In how many ways can you choose?
14. A salad bar offers eight choices of toppings for lettuce. In how many ways can you choose four or five toppings?
15. Fifteen students ask to visit the admissions representative from State University. Each visit includes one student. In how many ways can ten time slots be assigned?
16. Ten candidates are running for three seats in the student government. You may vote for as many as three candidates. In how many ways can you vote for three or fewer candidates?