EXERCISE 6.4

1. If ${}^{n}C_{8} = {}^{n}C_{2}$, find ${}^{n}C_{2}$.
2. Determine n if
   (i) ${}^{2n}C_{3} : {}^{n}C_{3} = 12 : 1$ (ii) ${}^{2n}C_{3} : {}^{n}C_{3} = 11 : 1$
3. How many chords can be drawn through 21 points on a circle?
4. In how many ways can a team of 3 boys and 3 girls be selected from 5 boys and 4 girls?
5. Find the number of ways of selecting 9 balls from 6 red balls, 5 white balls and 5 blue balls if each selection consists of 3 balls of each colour.
6. Determine the number of 5 card combinations out of a deck of 52 cards if there is exactly one ace in each combination.
7. In how many ways can one select a cricket team of eleven from 17 players in which only 5 players can bowl if each cricket team of 11 must include exactly 4 bowlers?
8. A bag contains 5 black and 6 red balls. Determine the number of ways in which 2 black and 3 red balls can be selected.
9. In how many ways can a student choose a programme of 5 courses if 9 courses are available and 2 specific courses are compulsory for every student?