A Problems (Required)	B Problems (For additional practice)
1. In a panel of 30 people, 12 members of a jury are to be selected. In how many different ways can the jury be selected?	1. In the Louisiana Lotto game, a player chooses 6 distinct numbers from 1 to 40. In how many ways is this possible?
2. In how many ways can a committee of 7 be chosen from 9 girls and 8 boys if a) all are equally eligible? b) the committee must include 4 girls and 3 boys?	2. How many ways can an 8-person committee be chosen from a group of 12 girls and 15 boys if a) all are equally eligible? b) There has to be an equal number of boys and girls?
3. Seven cards are dealt from a standard deck of 52 cards a) How many hands are possible? b) How many hands have 7 clubs? c) How many hands have exactly 5 spades? d) How many hands have all 7 cards of the same color?	3. Five cards are dealt from a standard deck of 52 cards a) How many hands are possible? b) How many hands have 5 clubs? c) How many hands have exactly 4 spades? d) How many hands have all 5 cards of the same color? e) How many hands have exactly 3 Kings? f) How many hands have exactly 3 of a kind?
4. In a group of 10 people, each person shakes hands with everyone else once. How many handshakes are there?	4. A group of 8 students "toasts" the end of the school year by clinking glasses of ginger ale. If each student clinks every other student's glass exactly once, how many such clinks take place?
5. In how many ways can 3 red, 4 blue, and 2 green pens be distributed to 9 students seated in a row if each student receives one pen?	5. In how many ways can 3 identical emeralds, 2 identical diamonds, and 2 different opals be arranged in a row in a display case?
6. In how many ways can 4 students be selected from 6 girls and 7 boys if there is to be an equal number of girls and boys?	6. In how many ways can 4 students be selected from 8 girls and 7 boys if there is to be an equal number of girls and boys?
7. Eight equally qualified applicants apply for 3 job positions. In how many different ways can the 3 positions be filled if the positions are: a) all different b) all the same	7. Three door prizes are to be given to 3 people in a crowd of 100. a) If the three prizes are different (1st, 2nd, and 3rd), in how many ways can this be done? b) If the three prizes are identical, in how many ways can this be done?

Mixed Practice -- No B Problems -- All are required
8. Suppose you are one of 12 people in a club.   a) How many committees of 5 can be selected?   b) How many committees of 5 can be selected that include you?   c) How many committees of 5 can be selected that exclude you?
9. How many 7-card hands can be dealt having: a) all 4 Queens?   b) 4 of a kind?   c) at least 3 aces?   d) a pair of Jacks?
10. A high school baseball coach must decide on the batting order for a team of 9 players.   a) How many different batting orders are possible?   b) How many batting orders are possible if the pitcher bats last?   c) How many different batting orders are possible if the pitcher bats last and the team's best hitter bats 3rd?
11. Solve for n: $_nP_4 = 8\left(_nP_3\right)$
12. In how many ways can 4 boys and 4 girls walk through the hallway single file if   a) there are no restrictions?   b) The girls walk before the boys?
13. In how many ways can the letters in each word be arranged?   a) ALBUQUERQUE   b) NIGHTINGALE