1.
   nCr = n! / r!(n-r)!
    n = 250 and r = 2.
   250C2 = 250! / 2!(250-2)! = (250 * 249) / 2 = 31,125

2.
    5! / (3! *2!) = 10

3. 2^3 = 8.

4.
   nCr = n! / r!(n-r)!
    n = 30 and r = 3.
   30C3 = 30! / 3!(30-3)! = (30 * 29 * 28) / (3 * 2 * 1) = 4,060

5.
   nCr = n! / r!(n-r)!
    n = 6 and r = 3.
   6C3 = 6! / 3!(6-3)! = (6 * 5 * 4) / (3 * 2 * 1) = 20

6.

7. 2C1 * 4C2 = 2 * 6 = 12,,,,,,,,,,,,,,,,,,,,4C3 = 4 the total number , is 12 + 4 = 16
8.
(a) 2C1 * 2C1 * 2C1 * 2C1 * 15C4 = 2 * 2 * 2 * 2 * 1365 = 10,920

(b) 2C2 * 2C2 * 2C2 * 2C2 * 5C2 = 1 * 1 * 1 * 1 * 10 = 10