PERMUTATIONS WITH REPETITION

1. How many distinct permutations are possible for each of the following:
    a) using five letters from the word "equation"?
    b) using three letters from the word "graph"?
    c) using all the letters in the word "graphic"?
    d) using all the letters in the word "algebra"?
    e) using all the letters in the word "coefficient"?
    f) using all the letters in the word "characteristics"?

2. How many distinct permutations are possible for each of the following:
    a) using all the flags (0nly difference color) if:
        i) 3 red, 6 blue, 5 green?
        ii) 6 black, 4 yellow, 3 orange, 2 blue?
        iii) 4 green, 3 red and 6 black, and the top flag must red?
        iv) 2 blue, 4 green and 5 red, and the top and bottom flags must be green?
    b) using all the beads (only difference color) and lining them in a row:
        i) 2 red, 4 brown, 5 yellow and 6 pink
        ii) 5 black, 4 orange, 3 green and 9 blue, and the first and last beads must be blue?

3. How many distinct permutations may be formed for each of the following:
    a) a five digit number if:
        i) the digits are 2, 5, 6, 8, and 9?
        ii) the digits are 2, 4, 6, 8, and 8?
        iii) the digits are 2, 2, 2, 5, and 6?
        iv) the digits are 3, 3, 5, 5, and 5?
        v) the digits are 4, 4, 4, 4, and 5?
    b) a five digit even number if:
        i) the digits are 2, 4, 6, 8, and 7?
        ii) the digits are 4, 4, 5, 6, and 6?
        iii) the digits are 5, 5, 5, 2, and 2?
        iv) the digits are 6, 6, 6, 6, and 9?
    c) a four digit odd number if:
        i) the digits are 3, 5, 7, and 9?
        ii) the digits are 3, 3, 5, and 5?
        iii) the digits are 7, 7, 7, and 2?
    d) a five digit number divisible by five if:
        i) the digits are 0, 3, 4, 7, and 9?
        ii) the digits are 0, 5, 3, 3, and 6?
        iii) the digits are 5, 5, 5, and 2, 2?