California State University Sacramento - Math 101

Quiz #3

Name: _____

1) Determine the number of 3-permutations of a set with 7 elements.

2) List all 2-permutations of the set $A = \{a, b, c\}$.

3) Find the number of sequences (a_1, a_2, a_3, a_4) that consist of distinct elements from the set $\{1, 2, 3, 4, 5\}$ where a_1 is even.

4) Find the number of sequences (a_1, a_2, a_3, a_4) that consist of elements from the set $\{1, 2, 3, 4, 5\}$ where a_1 is even.

5) Find the number of odd integers between 10,000 and 20,000 where no digit is repeated.

6) Find the number of 3-circular permutations of a set with 7 elements.

7) List all 3-circular permutations of the set $A = \{x, y, z, t\}$.

8) Write down formulas for P_r^n, Q_r^n, and write down an equation that relates Q_r^n to P_r^n.

9) Write down a formula for C_r^n in terms of factorials.

10) Find the number of ordered pairs (A, B) where A is a 3-element subset of $\{1, 2, 3, 4, 5\}$, and B is a 2-element subset of $\{6, 7, 8, 9, 10\}$.

11) Find the number of subsets of $A = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$ that consist of exactly three even integers and three odd integers.

12) Find the number of 2×3 rectangles in a 4×5 grid.