Discrete Math Quiz: Counting

Name and ID: .......................................................... ..........................................................

1. In how many 3-digit numbers all the digits are odd?

2. In how many 3-digit numbers all the digits are odd and different?

3. How many non-empty subsets of \{1, 2, 3, 4, 5, 6, 7, 8, 9\} contain only odd numbers?

4. How many non-empty subsets of \{1, 2, 3, 4, 5, 6, 7, 8, 9\} contain only even numbers?

5. How many non-empty subsets of \{1, 2, 3, 4, 5, 6, 7, 8, 9\} contain at least one odd number and at least one even number?

6. In how many permutations of 1, 2, 3, 4, and 5, the number 1 appears before the number 5?