

Math 131 - Dr. Miller - Activity #9: Basic Counting Problems - Fall 2024

1. A company generates identification codes for its employees by using two letters followed by a three-digit number.
 - (a) How many codes are possible if repeated letters and numbers are allowed?
 - (b) How many are possible if they are not?
 - (c) How many codes use the same letter twice? (Repeated numbers are allowed also.)
 - (d) How many codes use the same digit all three times? (Repeated letters are allowed.)

2.
 - (a) How many 5-letter “words” begin with a consonant followed by 2 vowels?
 - (b) How many begin with a consonant and end with a vowel?
 - (c) How many begin and end with the same letter?

3.
 - (a) How many 7-letter “words” are possible with no restrictions?
 - (b) How many don’t use any vowels?
 - (c) How many use at least 1 vowel?

4. The names of fraternities and sororities usually consist of 2 or 3 Greek letters. There are 24 letters in the Greek alphabet. How many fraternity/sorority names are possible?