Math 131 - Dr. Miller - Activity #10: Counting with Addition/Subtraction Principles - Fall 2024

1. Names of Greek societies consist of 2 or 3 Greek letters. There are 24 letters in the Greek alphabet.
   (a) How many society names are possible? (Show work, and simplify your answer.)

   (b) How many names do NOT use the letters alpha, beta, or gamma at all? (Show work and simplify.)

   (c) How many names use at least one alpha, beta, or gamma? (Show work and simplify.)

2. A merchandise code consists of one letter followed by either 3, 4 or 5 digits. Show work, simplify below.
   (a) How many codes are possible if symbols can repeat?

   (b) How many codes are possible if the last three symbols in such a code must match?

   (c) How many codes do NOT use any digits higher than 6?

   (d) How many use at least digit higher than 6?

3. (a) How many 3-letter codes don't use any vowels? (Use exponents to simplify, but no further.)

   (b) How many such codes use at least one vowel? (Use exponents to simplify, but no further.)