Snake Pit, Snake 1
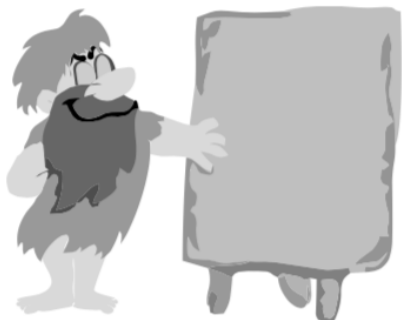
The Neanderthal man Foma was able to make 5 sounds: the vowels O and A and the consonants R, K, and F. A word in his language is any combination of these sounds.

Problem 1. Foma reserved all 5-letter consonant-only words for the names of dangerous animals—RRRFF and FRFKF, for example. How many dangerous animals can Foma name?

Problem 2. The name of a harmless animal is formed from 4 letters with 2 vowels in the center—RAOK or KAAO, for example. How many harmless animals can Foma name?

Problem 3. Foma plans to use 4-letter words with alternating vowels and consonants to name his future sons. For example, RAFA and AROR are possible names for them. How many sons can Foma name?

Problem 4. Foma plans to use 4-letter words that starts with a consonant and have 3 vowels to name his future daughters. For example, RAAA and ROAO are possible names for them. How many daughters can Foma name?
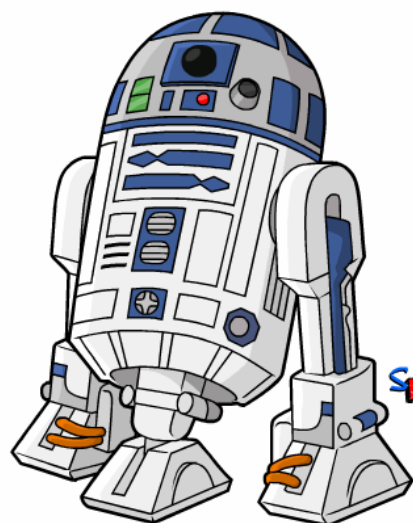
Snake Pit, Snake 2

A damaged robot named R2 remembers 5 digits only: 1, 2, 3, 4, and 5.

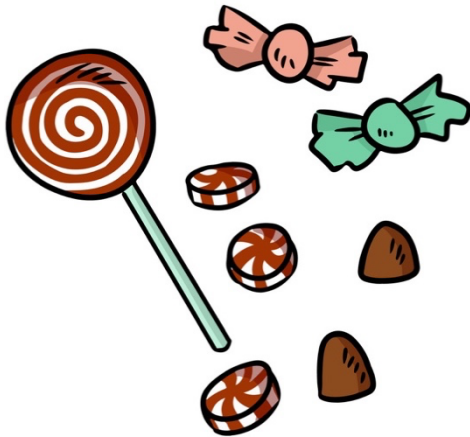Problem 1. How many 4-digit numbers can robot R2 write using these digits only?

Problem 2. How many 4-digit numbers with all digits different?

Problem 3. How many 4-digit numbers which starts with "324 " can it write?

Problem4. How many 4-digit numbers with exactly 1 digit "3" can it write?

Snake Pit. Snake 3

Milan, Christian's friend, has just returned from a trip to Europe with his parents. Knowing that Christian loves sweets, Milan brought him three bags of sweets: one with French chocolates, one with German caramels and one with Italian marmalades.

Problem 1. Christian's mother allowed Christian to eat only three sweets a day: one for breakfast, one for lunch and one after dinner. Every morning, Christian writes down which sweets he is going to eat that day and in what order. In how many ways can he make this list?

Problem 2. One morning, Christian realized that his sweets were almost gone: there was only one French chocolate, one German caramel and one Italian marmalade left. In how many ways can Christian make the list of sweets for the last time?

Problem 3. Milan took two pairs of boots, two pairs of shorts and six T-shirts with him to the Europe trip. In how many ways can Milan dress up during the trip? (The clothing set consists of a pair of shorts, a T-shirt, and a pair of matching boots.)

Problem 4. Alice, Milan's sister, took four pairs of shoes, two skirts, five blouses and three dresses with her to summer trip. In how many ways can Alice dress up at camp? (A clothing set consists of either a skirt, blouse and a pair of shoes, or a dress and a pair of shoes.)