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1. How many different ways can we permute the letters in the word GUITAR?

2. What about FANTASTIC?

3. How about MISSISSIPPI?

4. If we are trying to choose 4 students out of a class of 20 for a MATHCOUNTS competition team, how many different teams can we make?

5. There are 12 boys and 14 girls in a speech class. In how many different ways can 3 boys and 3 girls be chosen for a debate team?

6. How many 10-bit strings (of 0's and 1's) have exactly 3 0's?

7. How many numbers can be expressed as a sum of four distinct members of the set {17, 21, 25, 29, 33, 37, 41}?

8. How many numbers can be obtained as the product of two or more of the numbers 3,4,4,5,5,6,7,7,7?

9. How many integers can be obtained as a sum of two or more of the numbers 1,3,5,10,20,50,82?

10. A falling number is an integer whose decimal representation has the property that each digit except the units digit is larger than the one to its right. For example 96521 is a falling number but 89642 is not. How many n-digit falling numbers are there, for n = 1,2,3,4,5,6, and 7?