Answer on Question #76324 – Math – Discrete Mathematics

Question

How many permutations of the 26 letters of our alphabet do not contain any of the three strings "US", "AIM", and "DONKEY"?

Solution

The total number of permutations of the 26 letters:

n = 26!

To find the number of permutations which contain the given strings we have to arrange (26 - 11) letters and 3 strings (11 is the number of letters in all three strings):

$$m = (26 - 11 + 3)! = 18!$$

Answer: N = n - m = 26! - 18!