H Hyper Prefix Sets

Prefix goodness of a set string is length of longest common prefix*number of strings in the set. For example the prefix goodness of the set {000,001,0011} is 6.You are given a set of binary strings. Find the maximum prefix goodness among all possible subsets of these binary strings.

Input

First line of the input contains T(≤20) the number of test cases. Each of the test cases start with n(≤50000) the number of strings. Each of the next n lines contains a string containing only 0 and 1. Maximum length of each of these string is 200.

Output

For each test case output the maximum prefix goodness among all possible subsets of n binary strings.

Sample Input	Output for Sample Input
4 4 0000 0001 10101 010 2 01010010101010101010 11010010101010101010 3 01010101010100001000 1010 01010101010100001000 1000 01010101010100001000 1010 5 01010101010100001010010010100101 01010101010100001010011010101010 00001010101010110101 00010101010110101010 00010101010101001	6 20 66 44

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