	Problem E Lonely Robots	ACM-ICPC Thailand Mini Programming Contest Local Training 2016

You have two simple toy robots. Each robot is hard coded to travel around a grid according to a predetermined program. At each step in the program the robot can either move north, south, east, or west. The robots always start from the same square, act at the same time, and travel at the same speed. So if they leave the same square and travel in the same direction they will be in the same square when they arrive. They never run into each other.

The code of each robot is written as a sequence of characters from the set $\{n, s, e, w\}$. These stand for 'north', 'south', 'east', 'west'. As the code is executed the action appropriate for the symbol being read is performed. Symbols are read in the order they appear in the sequence.

You think the robots must get lonely during their deterministic travels around the grid, and that they would prefer to travel together. Because you are a kind person you think it would be nice to rewrite the code of the robots so that they are always in the same square. But, because you are also a lazy person, you don't want to do very much work. You decide that there is a limit to how many changes you a prepared to make to the robot code. If you can reprogram the robots so they stay together using at most n changes you will do the work, otherwise you will leave them to their lonely fates. After all, they're only toy robots.

To edit a program you can either change one of its commands to another one, or insert a new command anywhere in the string. You cannot delete existing commands because the circuit boards you are using make this simple seeming action too complicated for you to spend your time on.

Input

The first line of input is an integer smaller than 500 indicating the number of test cases. Each test case has three lines:

The first line contains a single number n indicating the maximum number of changes you are prepared to do make while reprogramming the robots. $(10 \le n < 25)$

The second line begins with a number a indicating how many instructions are in the code of the first robot. Following this is a sequence of a characters from $\{n, s, e, w\}$ separated by spaces. This is the code for the first robot. $(20 \le a < 23)$

The third line begins with a number b indicating how many instructions are in the code of the second robot. Following this is a sequence of b characters from $\{n, s, e, w\}$ separated by spaces. This is the code for the second robot. $(20 \le b < 23)$

Output

Output for each case is the string *yes* if you can reprogram the robots to stay together using at most n changes, or the string *no* if you cannot.

I/O example

Input	Output
2 4 6 n n n e s e 4 n n s w 3 8 s w n s s e n n 6 e e w s e e	yes no