Guessing a number

Andrew likes to play a «Guessing a number» game with his elder brother. The aim of the game is to guess the brother's number as quickly as possible. Then vice versa. The winner is determined by counting the attempts to guess the number. Who has the less number of guesses is winner. Andrew hasn't learnt a «Theory of algorithms» subject yet. *Your task:* help Andrew to solve this task.

The game is set on interval of natural numbers. The world is cruel, so brothers can lie to each other. But, if someone find out this, the number will be guessed then.

Input data format:

In first line, there is a game mode (0 – a guessing mode, 1 – a making your number mode). In next two lines, there are edges: *from* ($0 < from < 2147483647$) and *to* ($from < to < 2147483647$).

During the guessing mode in next lines will be a message, such as «less» (number is less than your guess), «more» (number is bigger than your guess) or «true» (number is guessed). After getting that message, you should input the next variant. If you would like to check the opponent is lying, then you'll get the message «true» (the opponent lies, the number is guessed) or «false» (the opponent is playing fair, continue to guess).

During the making your number mode you should output the message about numbers, the opponent names.

Output data format:

During the guessing mode you should output numbers till the message «true». If you suspect the opponent is playing unfair, then output the message «false».

During the making your number mode you have to inform the made number *value* ($0 < value < 2147483647$) in first line. In next lines you should inform if the input number is less (output «more») or bigger (output «less») than the *value*. If the number is guessed – output «true». Of course, you can lie, but, if the opponent will find out that, then it is considered he has guessed the number.

Example:

Standard input	Standard output
0	
1	
10	
	5
less	
	2
more	
	4
true	
1	
1	
20	
	7
10	
	less
3	
	more
5	
	more
7	
	true
0	
1	
15	
	5
more	
	10
more	
	false
false	
	12
more	
	false
true	

N.B.: Do output with "new line" command («endl» in C/C++ and Console.WriteLine() in C#)