Using the three-way comparisons to search for X in a matrix M, we can use the algorithm below.

We begin in the top-right corner of the matrix, and we compare it with the X and see if they match, if x is less than the value, we decrease the column by 1 and if it's greater we increment row by 1. We repeat this process until we find X, or all elements have been traveled.

The worst-case scenario will be if X is not found, and that will be 2N – 1 as one N for column and one N for row. Minus 1 is the array size so that won't affect the run time.