Obtain a 2D array from a text file and solve the problems below using the array.

a) Write a function to read all integers from a text file into a 2D array having 8 columns. Your function should return number of lines it read as an output parameter.

b) Consider the problem of finding maximum rectangular sum. In this problem you find the max sum value inside any rectangular defined in a table. We simplify the problem so that the size of the rectangular is predefined to be 2rows X 3columns in our problem.

E.g., for the table below the solution for the problem is the sum of elements in the shaded area

12	5	-2	7	-80	0	-5	7
10	20	15	5	20	-5	8	-20
5	-90	10	17	8	3	15	1
8	14	2	0	1	11	10	0

Write a function to solve the problem. The function should take the table and number of its rows, return the max sum as the return value and left upper coordinates of the rectangular of the solution as the output arguments with the following prototype:

int maxRecSumConstSize(int table[][8], int nRows, int* xCoor, int* yCoor)

c) Consider another simplification of this problem, in which the size of the rectangular is not constant but left upper coordinate of it, is constant. The new problem is to find max sum using any rectangular, whose upper corner is given. For example if (0, 0) point is given for the upper corner, the result for the table below is the sum of the elements in the shaded area.

12	5	-2	7	-80	0	-5	7
10	20	15	5	20	-5	8	-20
5	-90	10	17	8	3	15	1
8	14	2	0	1	11	10	0

Write a function solving this problem. The function should take the table, number of its rows and upper left coordinates of the rectangular, return the max sum as the return value and right below coordinates of the rectangular of the solution as the output arguments with the following prototype:

int maxRecSumConstCorner(int table[][8], int nRows, int leftUpXCoor, int leftUpYCoor, int* rightDownXCoor, int* rightDownYCoor)

Write a function to calculate the sum inside any rectangular as a helper function. The function should take the left above and right below coordinates of the rectangular and return the sum.

d) Write a function to solve the problem without any simplifications. This function should call "maxRecSumConstCorner" for each point in the table as the left upper corner and find max possible rectangular sum.