3. int numSmallerThanMid(int[][] matrix, int mid) {

int i = matrix.length - 1;

int j = 0;

int k = 0;

while (i >= 0 && j < matrix[i].length) {

if (matrix[i][j] > mid) i--;

else {

k += i + 1;

j++;

}

}

return k;

}

int solve(int[][] matrix, int k) {

int l = matrix[0][0], r = matrix[matrix.length - 1][matrix[0].length - 1];

while (l < r) {

int mid = (r - l) / 2 + l;

if (numSmallerThanMid(matrix, mid) < k) l = mid + 1;

else r = mid;

}

return l;

}