WORKSHEET 9/13/23
MATH 2331, FALL 2023

(1) For which values of k is the system of linear equations

$$2x + 2y + kz = 3$$
$$kx + ky + 8z = k + 2$$

consistent? When it is consistent, for which values is there a unique solution, and for which values are there infinitely many?

(2) How large can the rank of a matrix be?

(3) What can you say about the number of solutions to a system of linear equations assuming the rank of its coefficient matrix is
   (a) equal to the number of rows?
   (b) less than the number of columns?
   (c) equal to the number of columns?