

WORKSHEET 1/18/23
MATH 2331, SPRING 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?