

Consider the system of equation:

$$x_1 + 2x_2 + 2x_3 + x_4 = 8$$

$$3x_1 + 4x_2 + x_3 + x_5 = 7.$$

- (a) Find all the 10 solutions such that at least three of the variables equal zero.
(b) Determine the solution found in (a) that are nonnegative and yield

$$\max Z = 5x_1 + 2x_2 + 3x_3 - x_4 + x_5.$$