

Complete the following as instructed.

1. Let

$$A = \begin{bmatrix} 0 & 2 & 0 \\ 1 & 3 & 2 \\ -1 & 2 & 3 \end{bmatrix},$$

- (a) Find the reduced row echelon form of  $[A : I_3]$ . Clearly identify at each step all of the elementary row operations used.

- (b) Based on your answer to part A, find  $A^{-1}$  or explain why it does not exist.

2. Rutgers landscaping is purchasing plants for campus, and needs at least 350 plants with red flowers and at least 300 plants with white flowers. A flat of POPPIES contains 15 plants with red flowers and 20 plants with white flowers and costs \$60. A flat of GERANIUMS contains 20 plants with red flowers and 10 plants with white flowers and costs \$40. A flat of PETUNIAS contains 10 plants with red flowers and 15 plants with white flowers and costs \$30. (Note: poppies, geraniums and petunias are types of flowers.)

Set up a linear programming model of the situation described. Determine if the model is in standard form. If it is not, state what must be changed to put the model into standard form. Do ***not*** solve the linear programming model.