Homework 1: Systems of Linear Equations (Part 1)

- 1. $\S1.1, \#1, 9(a).$
- 2. \$1.2, #2, 3(a), 5.
- 3. Row reduce matrix A to reduced row echelon form. List the pivot columns of A.

$$A = \begin{bmatrix} 3 & 5 & 7 & 9 & 0 \\ 2 & 6 & 10 & 14 & 0 \\ 5 & 7 & 9 & 1 & 0 \end{bmatrix}$$

4. Find the equation $y = ax^2 + bx + c$ of the parabola passing through the points (-2, -6), (1, 6), and (3, 4). (Your answer should be an equation of the form $y = ax^2 + bx + c$, for some constants a, b, and c.)

Hint: Substituting the x- and y-coordinates of a point into the equation $y = ax^2 + bx + c$ will produce a linear equation in a, b, and c. Do this for the three given points to get three linear equations. Then solve the system of linear equations.