Name:

Quiz 3: §4.2-4.3

Complete the following problems to the best of your ability. **SHOW ALL OF YOUR WORK.** Unshown work will not be graded. You may use a calculator.

1. Let the matrices A, B and C be defined thusly:

$$A = \begin{bmatrix} 1 & 2 & 4 \\ -2 & 0 & 1 \end{bmatrix} \qquad B = \begin{bmatrix} 4 & 0 & -1 \\ 0 & -2 & 1 \\ 3 & 1 & 0 \end{bmatrix} \qquad C = \begin{bmatrix} 1 & 0 \\ -2 & 1 \end{bmatrix}$$

Evaluate the following.

(a) AB

(b) CB

(c) $A^T C$

(d) CA

2. Observe the following system of equations.

$$\begin{aligned} x + y &= 1 - z \\ y + z &= -6 \\ 10 &= -z \end{aligned}$$

(a) Write this system of equations as a equation of matrices in the form $AX = B$ (tell me exactly what the matrices A, X and B are).

(b) Find A^{-1}.

(c) Use A^{-1} to solve the system. Show me exactly how you did it.

(d) Suppose B is now the matrix $[0, 4, 2]^T$. Now solve the system.