

Name: \_\_\_\_\_

**Directions:** Show all work. No credit for answers without work.

1. [4 points] Solve the following linear system.

$$\begin{array}{rccccccc} & & 2x_2 & + & x_3 & = & 1 \\ -2x_1 & + & 17x_2 & + & 16x_3 & = & 1 \\ x_1 & - & 8x_2 & - & 8x_3 & = & 1 \end{array}$$

2. [3 points] Give an example of an **inconsistent** linear system with two equations Eq1 and Eq2 such that each equation individually has infinitely many solutions.

3. [**3 points**] The following augmented matrix represents a linear system. Find all values for  $h$  that make the system consistent. (Hint: simplify the second and third rows as much as possible before involving  $h$  in your computation. Avoid fractions if possible.)

$$\left[ \begin{array}{ccc|c} -1 & h & 30 & \\ 5 & -2 & -24 & \\ 3 & 2 & 8 & \end{array} \right]$$