

# Quiz #1

Please print your name:

---

**Problem 1.** Determine the augmented matrix for the following system of linear equations:

$$x_1 - x_2 = 1$$

$$x_2 - x_3 = 2$$

$$x_1 + x_2 = 3$$

**Solution.** 
$$\left[ \begin{array}{ccc|c} 1 & -1 & 0 & 1 \\ 0 & 1 & -1 & 2 \\ 1 & 1 & 0 & 3 \end{array} \right]$$

□

**Problem 2.** List the three kinds of elementary row operations. Give an example for each kind using the shorthand notation that we use in class.

**Solution.**

- (*replacement*) Add one row to a multiple of another row.

For instance,  $R_2 - 3R_1 \Rightarrow R_2$ .

- (*interchange*) Interchange two rows.

For instance,  $R_1 \Leftrightarrow R_2$ .

- (*scaling*) Multiply all entries in a row by a nonzero constant.

For instance,  $3R_1 \Rightarrow R_1$ .

□