# Reading Solutions.

Fall 2018

Attendance Quizzes

August 31, 2018

## Quiz 4 Reading Solutions.

Suppose that you are given an augmented matrix and its RREF:

$$M = \left[\begin{array}{cccc|c} x & y & z & w & RHS \\ \hline 1 & 1 & 3 & 3 & 0 \\ 1 & 2 & 3 & 2 & 1 \\ 1 & 9 & 0 & 1 & 11 \\ 2 & 3 & 6 & 5 & 1 \end{array}\right] \Rightarrow \left[\begin{array}{cccc|c} x & y & z & w & RHS \\ \hline 1 & 0 & 0 & 10 & 2 \\ 0 & 1 & 0 & -1 & 1 \\ 0 & 0 & 1 & -2 & -1 \\ 0 & 0 & 0 & 0 & 0 \end{array}\right]$$

Answer these questions.

1. The pivot variables are: **Answer:** $x, y, z$.
2. The free variables are **Answer:** $w$.
3. Hence the complete solution to the linear system described by $M$ is: **Answer:**

$$\left[\begin{array}{cccc} x & y & z & w \end{array}\right] = \left[\begin{array}{cccc} 2-10\,s & 1+s & -1+2\,s & s \end{array}\right].$$