| MA 237-02 <br> §1.3-1.4 | QuíZ \#2 | score | Name: $\quad$ |
| :--- | :--- | :--- | :--- |

1. Find the solutions to the following system of equations by putting the augmented matrix that corresponds to the system in row reduced echelon form. Show each step of the procedure and record the specific row operations using notation like $R_{1} \rightarrow R_{1}+R_{2}$. Then express your answer in parametric form showing the translation vector and the spanning vectors as appropriate. (10 points)

$$
\begin{aligned}
x+y+3 z & =3 \\
x-y+z & =-1 \\
3 x-y+z & =1
\end{aligned}
$$

2. Give an example of two non-zero 2-dimensional column vectors so that the column vector $\left[\begin{array}{l}1 \\ 1\end{array}\right]$ is not in their span. Explain. (5 points)
3. Write down a set of equations that determine the traffic flow for the example on the board. You don't need to solve the system, just write it down. (5 points)
