University of Central Punjab

Assignment # 2
Linear Algebra

1. **Determine the values of a for which the system has no solutions, exactly one solution, or infinite many solutions.**

$$\begin{aligned} x + 2y + z &= 2 \\ 2x - 2y + 3z &= 1 \\ x + 2y - (a^2 - 3)z &= a \end{aligned}$$

2. **Reduce the given matrix**

$$\begin{bmatrix} 2 & 1 & 3 \\ 0 & -2 & -29 \\ 3 & 4 & 5 \end{bmatrix}$$

to reduced row echelon form (RREF) without introducing fractions at any intermediate stage.