Using Matrices to Solve a System of Equations on a TI-86

$$\text{Solve}: \begin{cases} x - y + z = 8 \\ 2x + 3y - z = -2 \\ 3x - 2y - 9z = 9 \end{cases}$$

To solve we need to enter and name the augmented matrix.

$$\left[\begin{array}{ccc|c} 1 & -1 & 1 & 8 \\ 2 & 3 & -1 & -2 \\ 3 & -2 & -9 & 9 \end{array}\right]$$

2nd Matrix
F2: Edit
a
Enter
3
Enter
4
Enter

Fill in the numbers. When you hit enter, the cursor moves to the next space to the right in the row. At the end of the row, the cursor moves to the beginning of the next row.

To Solve:

Exit
2nd Matrix
F4: Ops
F5: rref
Alpha a
Enter

This gives the reduced row echelon form.

The solution is $x = 4$, $y = -3$, $z = 1$.