Sure! Let's consider the following system of linear equations:

```
x + 2y + 3z = 9

2x - y + z = 8

3x + y + 4z = 17
```

We can represent this system in the form of an augmented matrix, which combines the coefficients of the variables and the constants on the right-hand side of the equations into a single matrix:

```
1  2  3 |  9

2 -1  1 |  8

3  1  4 | 17
```

We can apply Gaussian Elimination to this augmented matrix in order to solve the system of equations. Here are the steps we would take:

1. We want to eliminate the coefficients below the first pivot element (which is the element in the first row and first column, i.e. 1). To do this, we subtract 2 times the first row from the second row, and subtract 3 times the first row from the third row. This gives us the following matrix:

```
1  2  3 |  9

0 -5 -5 | -10

0 -5 -5 | -8
```

2. Next, we want to eliminate the coefficient below the second pivot element (which is the element in the second row and second column, i.e. -5). To do this, we subtract the second row from the third row. This gives us the following matrix:

```
1  2   3  |  9

0 -5  -5  | -10

0  0   0  |   2
```

3. Now we can see that the third row corresponds to the equation 0x + 0y + 0z = 2, which is inconsistent and has no solution. Therefore, the original system of equations is inconsistent and has no solution.

In terms of computational resources, we can count the number of arithmetic operations required to perform Gaussian Elimination. In this case, we have a 3x4 augmented matrix, so the number of operations required is approximately:

```
(2/3) * 3^3 = 18
```

This includes both addition and multiplication operations. Note that this is just an estimate, and the exact number of operations required may vary depending on the implementation and the hardware used.