

# Mathematics For Me

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# Chapter 1

## Linear Algebra

### 1.1 Chapter 1: The Beginning, Systems of Linear Equations

At the beginning...there was a linear equation.

$$ax + by = c$$

This linear equation is simple, straightforward...some might say, like a line! Yes, because it only has 2 variables, it can only account for movements in 2-D space (movement in the  $x$  and movement in the  $y$  directions)!

This simple equation, tries to find some point  $(x, y)$  that generates  $c$ . Likewise, the 3D equation below:

$$ax + by + cz = d$$

Tries to find some point  $(x, y, z)$  that produces  $d$ . Unlike the first equation, this equation is solving in 3D space because we can move in 3 different directions ( $x$ ,  $y$ , and  $z$ ).