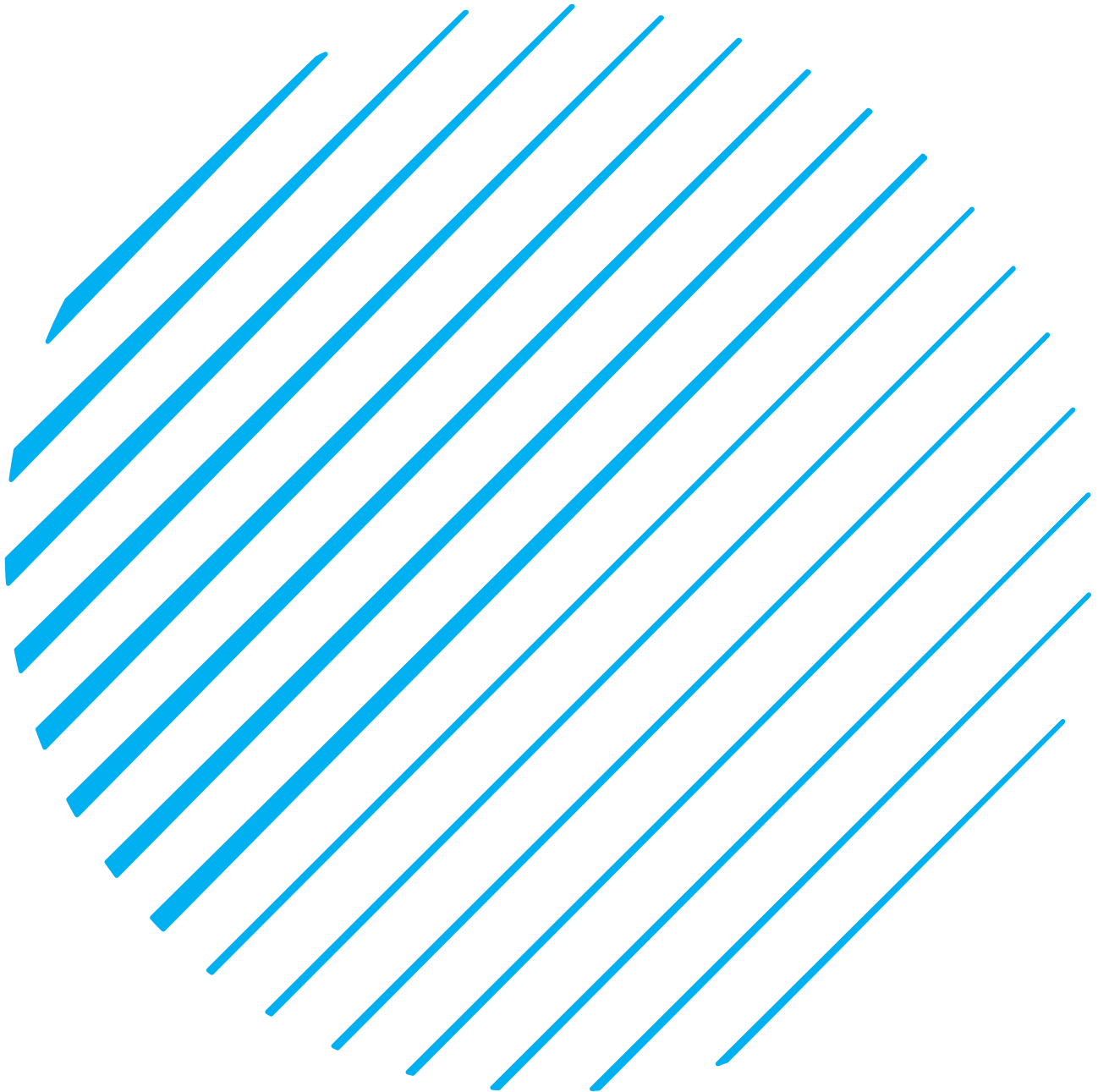


# VITAL MATHEMATICS



ALGEBRA

LINEAR EQUATION IN ONE VARIABLES

STEVIE CARPENTER

## INTRODUCTION

A variable is a letter or symbol that represents the various values that a variable could be within mathematical operations. A common variable used in algebra is  $x$  and  $y$ . Since we are evaluating linear equations, the variable is written with no exponent or root function. The purpose of this linear equations in one variable is to provide knowledge on how to solve and evaluate a linear equation with one variable, that has one solution.

## SOLVING LINEAR EQUATION IN ONE VARIABLES

**STEP 1)** Remove the parentheses using the distributive property.

$$\textit{Example: } x(a + b) = x \times a + x \times b$$

**STEP 2)** Combine like terms on each side of the equation.

**STEP 3)** Move the variables to the left side and move the constants to the right.

**STEP 4)** When there is a constant attached to the variable, divide or multiply the constant attached to the variable on both sides.

**STEP 5)** Evaluate the equation by using the given variable value as a solution to see if it is true.

## LINEAR EQUATION IN ONE VARIABLES EXAMPLE

Example 1) Solve  $3x - 4 = 12$

Example 2) Solve  $\frac{1}{3}x + 2 = 8$

Example 3) Solve  $-3(z + 2) = 4z + 1$

Example 4) Solve  $\frac{y+1}{4} + \frac{y-2}{10} = \frac{y+7}{20}$

## CONCEPTS CONCERNING LINEAR EQUATIONS IN ONE VARIABLE

Always evaluate the final answer to check that it is a solution, and does not contradict reasonable knowledge. When a variable of similar symbol, but different exponents or roots; they are considered different variables.

Same	Different
$4x$ and $9x$	$4x$ and $9x^2$
$X^3$ and $3x^3$	$X^3$ and $3x$
$\sqrt{x}$ and $4\sqrt{x}$	$\sqrt{x}$ and $x$



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