

Foundations of Math 2  
Unit 1 Study Guide  
Linear Equations

**Key Terms:**

- Coefficient
- Dimensional Analysis
- Identity
- Distributive Property
- Constant
- Equation
- Like Terms
- Conversion Factor
- Expression
- Literal Equation
- Degree
- Formula
- Term

**Material by Subject:**

1.1. Operations with Negative Numbers

- Be able to add negative numbers.
- Be able to subtract negative numbers.
- Be able to multiply negative numbers.
- Be able to divide negative numbers.
- Understand how negative numbers and positive numbers relate on the number line.

1.2. Multiplication and Addition of Fractions

- Be able to add/subtract fractions with like denominators.
- Be able to convert denominators using lead common multiples.
- Be able to add/subtract fractions with different denominators
- Be able to multiply fractions.

1.3. Conversions Using Dimensional Analysis

- From an equality, be able to create a conversion factor (fraction).
- Understand how to choose which version of a conversion factor is needed to convert between units.
- Be able to use dimensional analysis to convert one unit to another.
- Be able to use dimensional analysis for multiple conversions in the same problem.

1.4. Dissecting Terms in Algebraic Expressions

- Be able to use the distributive property
- Understand the difference between a term, expression, and an equation.
- Understand the difference between a coefficient and a constant.
- Be able to determine the degree of a term.
- Given a mixture of terms, expressions, and equations, be able to sort into the appropriate category.

1.5. Solving Linear Equations

- Understand how to and be able to combine like terms in an expression or equation.
- Recall the order of operations (P E MD AS)
- Be able to follow the order of operations backwards when solving a linear equation.
- Understand how to use the distributive property in an equation.
- Be able to solve equations containing fractions or decimals.
- Be able to solve equations when there is a variable on both sides, including cases with grouping symbols.
- Recognize when an equation has no solution or is an identity (this may require you to solve most/all of the way).

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1.6. Literal Equations and Formulas

- Be able to identify literal equations.
- Be able to re-write literal equations with only variables.
- Know what a formula is.
- Be able to rearrange a formula for any variable in the formula.

1.7. Linear Inequalities

- Be able to solve multi-step inequalities, including when they have a variable on both sides.
- Remember that multiplying or dividing by (-1) in an inequality switches the sign.
- Recognize that some inequalities do not have solutions; be able to identify these.
- Be able to apply linear inequalities to real-world situations (word problems).