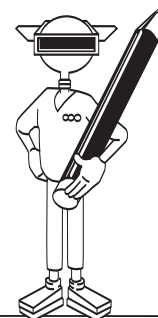


COURSE: **MSC V**
 MODULE 1: **Essentials of Algebra**
 UNIT 3: **Simple Equations**

Student Logbook



Simplifying Algebraic Expressions

As you work through the tutorial, complete the following statements and questions.

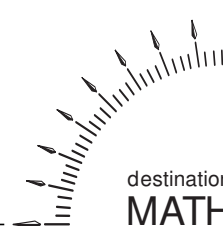
1. a. Dijit writes 2.5 as the fraction _____ .
 b. When this fraction is substituted for 2.5 into the equation $34 + 2(2.5t - 1) + 2[\frac{1}{2}(2.5t - 1) - 2] = 102$, the result is _____ .
2. To what does the left side of the equation in Question 1b refer? _____
3. a. Simplify the expression $2(\frac{5}{2}t - 1)$. _____
 b. What does this expression represent? _____
4. a. Simplify the expression $2[\frac{1}{2}(\frac{5}{2}t - 1) - 2]$. _____
 b. What does this expression represent? _____
5. a. Using the simplified expressions you just produced, rewrite the expression for the weight of all the machinery in the left part of the cargo space. _____
 b. What is the numerical value of this expression? _____
 c. In the expression, substitute the appropriate decimal for $\frac{5}{2}$. _____
 d. Simplify the expression. _____
 e. Using this simplified expression, write the equation that describes the weight on both sides of the cargo space. _____
 f. Translate the expression into words. _____

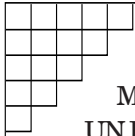
Key Words:

Simplify
 Order of operations
 Like terms
 Equation
 Constant

Learning Objectives:

- Simplifying one side of an equation using the distributive property of multiplication over addition and following the order of operations
- Combining like terms
- Investigating the elements of an algebraic expression





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Your
Turn



Simplifying Algebraic Expressions

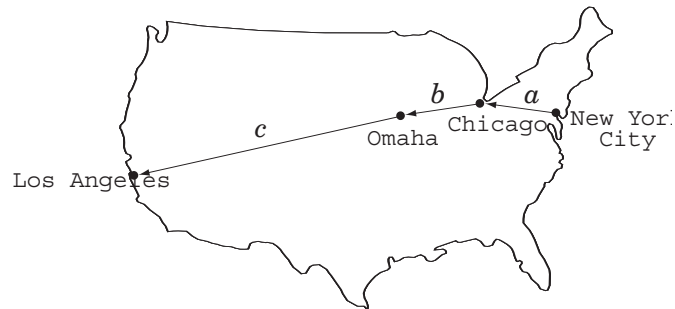
The distance in miles between New York City and Los Angeles can be expressed by the following equation where a represents the distance between New York City and Chicago:

$$a + \left[\left(\frac{1}{2} \times a\right) + 58\right] + \{4\left[\left(\frac{1}{2} \times a\right) + 58\right] - 241\} = 2,856$$

1. Rewrite the expression $\left(\frac{1}{2} \times a\right) + 58$ without using parentheses. _____

2. Use the distributive property and simplify the expression $4\left[\left(\frac{1}{2} \times a\right) + 58\right]$. _____

3. Use your answer in (2) and simplify the expression $4\left[\left(\frac{1}{2} \times a\right) + 58 - 241\right]$. _____



4. Using the simplified expressions in (1) and (3), rewrite the equation in terms of a .

5. Simplify the left side of the equation in (4) by combining like terms.

6. Use the expression in (5) and rewrite the equation that represents the total distance between New York City and Los Angeles. _____

