Lesson # 4

Variables: Unknown Values

Date

I. Definitions

II. Inverse Operations

III. Solving for Variables

IV. Evaluate Algebraic Expressions

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Pre-Algebra and Geometry I
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Lesson # 4

Variables: Unknown Values

Date

I. Definitions

variable:

algebra:

algebraic expression:

The employee at the grocery store knew there were sixteen apples available for sale. 4 apples were on the shelf and a box of apples were stored in the back. How many apples must be in the box?

4 + a = 16

II. Inverse Operations

$$\begin{array}{r} 16 \\ -\ 4 \\ \hline \end{array} \qquad \begin{array}{r} 4 \\ +\ \_\_ \\ \hline 16 \end{array} \qquad \begin{array}{r} \\ +\ 4 \\ \hline 16 \end{array}$$

Addition and _____ are inverse operations.

$$\begin{array}{r} 2 \\ \times\ \_\_ \\ \hline 10 \end{array} \qquad 2\overline{)10} \qquad 2\overline{)10}$$

Multiplication and _____ are inverse operations.

III. Solve for the Variable in Addition and Subtraction Equations.

Find Each Missing Number, Then Check

$$\begin{array}{r} 16 \\ +\ N \\ \hline 45 \end{array}$$

$$\begin{array}{r} N \\ +\ 12 \\ \hline 38 \end{array}$$

To solve for a missing **addend**

3. $$\begin{array}{r} b \\ +\ 3 \\ \hline 26 \end{array}$$

4. $$\begin{array}{r} 16 \\ +\ n \\ \hline 16 \end{array}$$

5. $$\begin{array}{r} 401 \\ +\ p \\ \hline 465 \end{array}$$

6. $$\begin{array}{r} m \\ +\ 98 \\ \hline 120 \end{array}$$

$$\begin{array}{r} N \\ -\ 25 \\ \hline 54 \end{array}$$

To solve for a missing **minuend**

$$\begin{array}{r} 78 \\ -\ N \\ \hline 61 \end{array}$$

To solve for a missing **subtrahend**

7. $p - 18 = 18$

8. $20 - w = 5$

9. $416 - R = 120$

10. $165 - 7 = d$

To solve for a missing **factor**

$$\begin{array}{r} 10 \\ \times\ N \\ \hline 40 \end{array}$$

$$\begin{array}{r} N \\ \times\ 11 \\ \hline 88 \end{array}$$

11. $$\begin{array}{r} S \\ \times\ 6 \\ \hline 36 \end{array}$$

12. $$\begin{array}{r} 25 \\ \times\ h \\ \hline 75 \end{array}$$

IV. Evaluate algebraic expressions

Evaluate each algebraic expression when a = 1, b=2, and c=3

a + 5	a + b
13. c – b	14. (b)(c)

To evaluate **algebraic expressions**