Reading Log

Book/Title, Pages

Solving Basic Equations (2.2)
from *Foundations of Algebra*

Name

Date

1 My **purpose** is: to review solving linear equations

2 My **learning objectives** are:

Sharpen my memory
Learn any new approaches
Review validation process

3 My **performance criteria** are:

Solve given sample equations using the methodologies as presented

4 **Time** I expect to spend reading: 30 mins

5 Key **Vocabulary**

Use each key word in a new context or phrase.

equivalent equations	$2x = 4$ and $3x = 6$ are equivalent equations.
literal equation	A literal equation may contain no numbers at all: $l \times w = h$.
order of operations	The order of operations is easy to remember with PEDMAS.

6 **Outline** of reading (structure):

Activity Format

Why
Key Concepts
Methodology (Isolating a Variable) + Model
Methodology (Clearing Fractions)
Methodology (Solving a Linear Equation) + Model
Addressing Common Errors (Incorrect use Properties, Order of Operations, Ignoring a Sum of Zero, Adding Unlike Terms)
Critical Thinking Questions
Demonstrate Your Understanding
The Hardest Problem
Identifying Common Errors
What I Learned

7 **Quick read** (information about the reading and questions I have as I begin to read):

Review terminology; I didn't learn the term "literal equation" when I studied this content previously.

Is substituting the answer into the original equation the only way to validate these problems? (It is probably the best.)

What is the difference between "literal equation" and a linear equation in more than one variable?

8 **Comprehensive Read** **Actual Time** I spent reading: 40 mins

9 **Inquiry Questions** Questions, ideas, opinions, discoveries:

When is a literal equation a linear equation (or visa versa)?

Take d = rt (a literal equation). It is linear if you know the rate and time (for instance, but knowing any two of the three variables is the key). Then it can be written as a linear equation:

d = 50 mph x 3 hrs or d = [(50 miles) / (1 hour)] x 3 hours

Many, if not all formulas, are literal equations.

10 **Synthesis** Pull it together:

Clearing fractions and isolating variables (both methodologies in this reading) are integrated as steps in the Methodology for Solving a LInear Equation.

Review of mathematical properties is critical to solving linear equations (the most common errors are in violating these properties when solving the equation).

11 **Integrate** The relationship between the new information and my previous knowledge and experience is:

I can see that a linear equation can have a different number of solutions (one: when 2x = 1, none: when x = x + 1, or an infinite number: when x = x). From my other math education, I know that the number of solutions also depends generally on the degree of the variable (its "power"). So linear equations in a single variable can be thought of as lines (linear) and the solution is a point on that line. Thus they could be 'graphed' on or as a number line. With systems of equations in two variables, we're dealing with two lines and their solution is a point (such as x, y) where they intersect. The higher the degree of the variables, the more potential intersections (i.e., solutions).

12 **Assessment** The following affected (positively or negatively) the quality of my reading performance and how I can improve:

I can sometimes be stubborn and found myself trying to work with unweildy fractions when striving to validate an answer. After several frustrating minutes, it occured to me that using a calculator and approximating to several decimal places was MORE than good enough for the purposes of validation. That would at least tell me, with a nearly negligible degree of error, if I had worked the problem correctly. I can improve in future by consciously trying to validate more efficiently.

INSTRUCTOR FEEDBACK

Strengths:

Areas for Improvement:

Insights: