

A PRIMER FOR SOLVING RELATIONS

(EQUATIONS AND INEQUALITIES)

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Re-examine how to teach algebraic concepts using an inquiry approach (the Socratic method). In this workshop, we will develop the questions students need to ask in order to solve any basic algebraic relation, and to “undo” all of the complications they may encounter when solving first-degree equations and inequalities.

I. Introduction

A. “Algebra is.....”

1. the study of relations,
2. by degrees.

B. *Solving Equations and Inequalities*

1. the same way?
2. exceptions?
3. interpretation of solutions?
 - a. three formats
 - 1) solution statement
 - 2) solution set
 - 3) graph – questions?
 - b. Example

C. *Notice the Questions*

II. Basic Relations

A. *Make Zeros?*

1. Strategy?
 - a. first example
 - b. second example
2. Other interpretations?

B. *Make Ones?*

1. Strategy?
 - a. first example
 - b. second example
 - c. third example
2. Other interpretations?

C. *Combinations?*

1. Make zeros
2. Make ones
3. Hierarchy?

III. Complications on Basic Relations

A. *Grouping Symbols?*

1. Strategy?
2. Example

B. *Like Terms on the Same Side?*

1. Strategy?
2. Example

C. *Variables on Both Sides?*

1. Strategy?
2. Example

D. *Combinations?*

1. Strategy?
 - a. grouping symbols?
 - b. like terms on the same side?
 - c. variables on both sides?
2. Example
3. Hierarchy?

IV. So.....Why do it This Way?

A. *Mathematically “Clean”*

B. *Inquiry-Based Approach*

C. *Fail-Safe*