NAME

Module 3   Solving Linear Equations
                of One Variable
Lesson 1   Identifying Properties of Equality

guided practice

Set 1

State and write the definition for the Property of Equality illustrated below.

1. If $a = 3$, then $3 = a$.

Symmetric Property of Equality:

For all real numbers *a* and *b*,

if *a* = *b*, then *b* = *a*.

2. If $2x = 8$, then $x = 4$.

Division Property of Equality:

For all real numbers *a*, *b*, and *c*, *c* ≠ 0,

if *a* = *b*, then $\frac{a}{c} = \frac{b}{c}$.

3. If $x + 2 = 4 - y$ and $4 - y = 7$, then $x + 2 = 7$.

Transitive Property of Equality:

For all real numbers *a*, *b*, and *c*,

if *a* = *b* and *b* = *c*, then *a* = *c*.

4. If $x - 5 = 4$, then $x = 9$.

Addition Property of Equality:

For all real numbers *a*, *b*, and *c*,

 if *a* = *b*, then *a* + *c* = *b* + *c*.

Set 2

Given the following algebraic problem, find the reason for each statement: $4x - 1 = 15$

$$4x = 16$$
$$x = 4$$

1. What is the reason for statement one: $4x - 1 = 15$? **Given**

2. What is the reason for statement two: $4x = 16$? **Addition Property of Equality**

3. What is the reason for statement three: $x = 4$? **Division Property of Equality**

Given the following algebraic problem, find the reason for each statement: $\frac{y}{3} + 2 = 6$

$$\frac{y}{3} = 4$$
$$y = 12$$

4. What is the reason for statement one: $\frac{y}{3} + 2 = 6$? **Given**

5. What is the reason for statement two: $\frac{y}{3} = 4$? **Subtraction Property of Equality**

6. What is the reason for statement three: $y = 12$? **Multiplication Property of Equality**

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410-467-3300