

UNIT 3 • REASONING WITH EQUATIONS

Lesson 1: Solving Equations and Inequalities



Practice 3.1.1: Properties of Equality

Identify the property of equality that justifies each missing step or equation.

1.

Equation	Steps
$6 + x = 72$	Original equation
$x = 66$	

2.

Equation	Steps
$\frac{x}{9} = 2.4$	Original equation
$x = 21.6$	

3.

Equation	Steps
$-7x - 12 = 16$	Original equation
$-7x = 28$	Addition property of equality
$x = -4$	

4.

Equation	Steps
$8 = 0.4x - 2$	Original equation
$10 = 0.4x$	
$25 = x$	Division property of equality
$x = 25$	Symmetric property of equality

5.

Equation	Steps
$5(6x - 2) = 50$	Original equation
$30x - 10 = 50$	Distributive property of multiplication over addition
$30x = 60$	
	Division property of equality

continued

UNIT 3 • REASONING WITH EQUATIONS

Lesson 1: Solving Equations and Inequalities



6.	Equation	Steps
	$\frac{x}{4} - 5 = 6$	Original equation
		Addition property of equality
	$x = 44$	

7.	Equation	Steps
	$\frac{3x}{2} - 5 = 16$	Original equation
	$\frac{3x}{2} = 21$	
	$3x = 42$	
	$x = 14$	

8.	Equation	Steps
	$8(2x - 1) = 56$	Original equation
	$2x - 1 = 7$	
	$2x = 8$	
	$x = 4$	

Solve each equation that follows. Justify each step in your process using the properties of equality. Be sure to include the properties of operations, if used.

9. $\frac{4x}{9} = 20$

10. $13 = \frac{1}{3}x - 5$