

Unit 9
Solving Multi-step Equations

Math Essentials

1

Practice 9.1

For each value of y ,
determine whether it is
a solution to

$$-5 = 3y - 2$$

y	Is it a solution?	
	Yes	No
0	<input type="radio"/>	<input type="radio"/>
5	<input type="radio"/>	<input type="radio"/>
-1	<input type="radio"/>	<input type="radio"/>
9	<input type="radio"/>	<input type="radio"/>

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Practice 9.2

Solve for the variable.

1. $53 = -21 + 74u$

2. $7(v - 4) = 28$

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Practice 9.3

Solve for y . Simplify your answer.

$$4y + y = 10$$

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Practice 9.4

Solve for the variable.

1. $-63 = 2x + 9x - 19$

2. $-2v + 2 = -7v + 17$

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Practice 9.5

Solve for x . Simplify your answer.

1. $1 = -5x + 8(x + 2)$

2. $-7x + 2 = 2(x - 8)$

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Find the
Error

$$4x + 9 = 2x - 3$$

$$6x + 9 = -3$$

$$\quad -9 \quad -9$$

$$6x = -12$$

$$/6 \quad /6$$

$$x = -2$$

7

Find the
Error

$$5(2x + 6) = 12$$

$$10x + 6 = 12$$

$$\quad -6 \quad -6$$

$$10x = 6$$

$$/10 \quad /10$$

$$x = 6/10 = 3/5$$

8

Find the
Error

$$4x - 2(x + 4) = 22$$

$$4x - 2x + 8 = 22$$

$$2x + 8 = 22$$

$$\quad -8 \quad -8$$

$$2x = 14$$

$$/2 \quad /2$$

$$x = 7$$

9

Find the
Error

$$8x + 6 - 3x + 2 = 30$$

$$+3x \quad +3x$$

$$11x + 8 = 30$$

$$-8 \quad -8$$

$$11x = 22$$

$$-11 \quad -11$$

$$x = 11$$

10

Find the
Error

$$12x + 5 - 6x = 50$$

$$6x + 5 = 50$$

$$-5 \quad -5$$

$$6x = 45$$

$$-6 \quad -6$$

$$x = 39$$

11

Practice 9.6

Solve for the variable.

$$\frac{9v}{8} - 2 = \frac{11v}{10}$$

Multiply
the LCD!!

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Extra Practice

$$4x + \frac{2}{5}x + 4 = 25$$

Multiply
the LCD!!

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13

Find the
Error

$$4x + \frac{2}{5}x + 4 = 25$$

$$4x + \frac{2}{5}x + 4 = 25$$

$$20x + 2x + 20 = 25$$

$$22x + 20 = 25$$

$$\quad -20 \quad -20$$

$$22x = 5$$

$$\quad /22 \quad /22$$

$$x = 5/22$$

14

Extra Practice

$$\frac{2}{7}x - 2 = x + 3$$

Multiply
the LCD!!

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Find the Error

$$\frac{2}{7}x - 2 = x + 3$$

$$14x - 14 = 7x + 21$$

$$\begin{array}{r} -7x \\ -7x \end{array}$$

$$7x - 14 = 21$$

$$\begin{array}{r} +14 \\ +14 \end{array}$$

$$7x = 35$$

$$\begin{array}{r} /7 \\ /7 \end{array}$$

$$x = 5$$

16

Practice 9.7

Solve for y. Simplify your answer.

$$-\frac{1}{2}y + \frac{1}{3} = -\frac{1}{3}y - 6$$

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Practice 9.8

The container that holds the water for the football team is $\frac{3}{4}$ full. After pouring out 7 gallons of water, it is $\frac{1}{2}$ full. How many gallons can the container hold?

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Extra Practice

1. $\frac{1}{10} - \frac{7y}{2} = \frac{3}{5} - 4y$

2. $5x - 6x = 3x$

3. $\frac{7}{2}(x - 4) + \frac{x}{3} = 2x - \frac{7}{6}$

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