Lesson 3-3 and 3-4: Solving Equations (Part 2)

Can you figure out what value the variable represents in each equation?

$2b+5=13$	$\frac{c}{4}-2=3$	$3x-8=13$	$\frac{y}{2}+4=10$

To solve these equations and other more difficult equations, it will be important that we use our **inverse operations** to get the variable by itself on one side of the equation.

Take a look at this example:

$$\begin{array}{r|l} 2b+5=13 & \\ -5 & -5 \\ 2b=8 & \end{array}$$

Check:

$$\begin{array}{r|l} 2b+5=13 & \\ 2(\ )+5=13 & \\ +5=13 & \\ =13 & \end{array}$$

Checklist:

1. _____
2. _____
3. _____

Let's Try This One Together!

Example 1 Solve Equations with Two Operations

You received $86 in all selling paintings. You sold one painting for $29 and the rest for $19 each. Solve the equation below to find *x*, the number of $19 paintings you sold.

$19x + 29 = 86$

Check:

Got It?

Solve each equation. Show your steps.

1. $2x + 15 = 79$

2. $4x + 22 = 86$

1. $2x+15=79$	Check:	2. $4x+22=86$	Check:

Intro Can I Solve Equations with Division and Subtraction?

Let's Take a Look at a few with Division:

1. $\frac{x}{3}-7=4$	Check:	2. $\frac{x}{6}-3=5$	Check:

Lesson 3-3 and 3-4: Solving Equations (Part 2)

Can you figure out what value the variable represents in each equation?

$2b+5=13$	$\frac{c}{4}-2=3$	$3x-8=13$	$\frac{y}{2}+4=10$
$b=4$	$c=20$	$x=7$	$y=12$

To solve these equations and other more difficult equations, it will be important that we use our **inverse operations** to get the variable by itself on one side of the equation.

Take a look at this example:

$$2b+5=13$$
$$-5 \quad -5$$
$$2b=8$$
$$\div 2 \quad \div 2$$
$$b=4$$

Check:

$$2b+5=13$$
$$2(4)+5=13$$
$$8+5=13$$
$$13=13$$

Checklist:

1. Undo addition and Subtraction
2. Undo & multiplication and division
3. Check

Let's Try This One Together!

Example 1 Solve Equations with Two Operations

You received $86 in all selling paintings. You sold one painting for $29 and the rest for $19 each. Solve the equation below to find x, the number of $19 paintings you sold.

$19x + 29 = 86$

$-29 \quad -29$

$19x = 57$

$\div 19 \quad \div 19$

$x = 3$

Check:

$19x + 29 = 86$

$19(3) + 29 = 86$

$57 + 29 = 86$

$86 = 86$

Got It?

Solve each equation. Show your steps.

1. $2x + 15 = 79$

2. $4x + 22 = 86$

1. $2x+15=79$ $-15 \quad -15$ $2x=64$ $\div 2 \quad \div 2$ $x=32$	Check: $2x+15=79$ $2(32)+15=79$ $64+15=79$ $79=79$ ✓	2. $4x+22=86$ $-22 \quad -22$ $4x=44$ $\div 4 \quad \div 4$ $x=11$	Check: $4x+22=86$ $4(11)+22=86$ $44+22=86$ $86=86$ ✓

Intro Can I Solve Equations with Division and Subtraction?

Let's Take a Look at a few with Division:

1. $\frac{x}{3}-7=4$ $+7 \quad +7$ $3 \cdot \frac{x}{3}=11 \cdot 3$ $x=33$	Check: $\frac{x}{3}-7=4$ $\frac{33}{3}-7=4$ $11-7=4$ $4=4$ ✓	2. $\frac{x}{6}-3=5$ $+3 \quad +3$ $\frac{x}{6}=8$ $\cdot 6 \quad \cdot 6$ $x=48$	Check: $\frac{x}{6}-3=5$ $\frac{48}{6}-3=5$ $8-3=5$ $5=5$ ✓