

On the table next to the red basket:

- **Pick up a Homework Answer Key to share with a partner**
- **Check your answers and find your percent score**
- **Put a check mark in the box for any questions you want me to go over**

Lesson 1.2

Learning Target: Solve Multi-Step Equations
Part 1, Part 2 and Part 3

As Shrek Said, "Onions have layers."



**"To Solve an Equation, Simplify
One Layer at a Time!"**

To Solve a Multi-Step Equation

Order of Steps:

1st: Use the Distributive Property

2nd: Combine Like Terms

3rd: Cancel with + or -

4th: Cancel with * or \div

Part 1

Review: 2-Step Equations

Order of Steps

1st: Use the inverse of addition/subtraction

2nd: Use the inverse of multiplication/division

*recommended steps - as you advance in Algebra,
you will see multiple paths to a solution

Review: Two-Step Equations

Order of Steps 1st: Cancel with addition or subtraction
2nd: Cancel with multiplication or division

$$\begin{array}{r} 1. \quad -3k + 1 = 7 \\ \quad \quad \quad \textcircled{-1} \quad -1 \\ \hline \quad -3k = 6 \\ \quad \quad \quad \frac{-3}{-3} = \frac{6}{-3} \end{array}$$

$$k = \boxed{-2}$$

$$\begin{array}{r} 2. \quad +19 - 4c = 17 \\ \quad \quad \quad \textcircled{-19} \quad -19 \\ \hline \quad -4c = -2 \\ \quad \quad \quad \frac{-4}{-4} = \frac{-2}{-4} \end{array}$$

$$c = \frac{-2}{-4}$$
$$c = 0.5$$

$$c = \boxed{}$$

Complete these - check your work with your partner

$$1. \quad -3y + 4 = 64$$
$$\quad \quad -4 \quad -4$$

$$\frac{-3y}{-3} = \frac{60}{-3}$$

$$y = -20$$

$$3. \quad 8h - 7 = 17$$

$$\quad \quad +7 \quad +7$$

$$\frac{8h}{8} = \frac{24}{8} \quad (h=3)$$

$$5. \quad -3y - 18 = 36$$
$$\quad \quad +18 \quad +18$$

$$\frac{-3y}{-3} = \frac{54}{-3}$$

$$y = 18$$

$$2. \quad 7k - 13 = 50$$

$$\quad \quad +13 \quad +13$$

$$\frac{7k}{7} = \frac{63}{7}$$

$$k = 9$$

$$4. \quad -5p + 18 = 43$$

$$\quad \quad -18 \quad -18$$

$$\frac{-5p}{-5} = \frac{25}{-5}$$

$$p = -5$$

$$6. \quad 4w + 36 = 48$$

$$\quad \quad -36 \quad -36$$

$$\frac{4w}{4} = \frac{12}{4}$$

$$w = 3$$

Special Cases

$$\begin{array}{r} 5x - 15 = 45 \\ +15 \quad +15 \\ \hline .5x = \frac{60}{5} \\ \frac{5x}{5} = \frac{60}{5} \\ x = 12 \end{array}$$

$$\begin{array}{r} \frac{5x}{5} - \frac{15}{5} = \frac{45}{5} \\ x - 3 = 9 \\ +3 \quad +3 \\ \hline x = 12 \end{array}$$

$$\begin{array}{r} \frac{f}{2} + 8 = 30 \\ -8 \quad -8 \\ \hline \cancel{2} \cdot \frac{f}{2} = 22 \cdot 2 \\ f = 44 \\ \cancel{2} \cdot \frac{f}{2} + 8 = 30 \cdot 2 \\ f + 16 = 60 \\ -16 = -16 \\ \hline f = 44 \end{array}$$

Learning Target: Solve Multi-Step Equations

The height of a tree after x years is $1.5x + 15$.
After how many years is the tree 24 feet tall?

$$\begin{array}{r} 24 = 1.5x + 15 \\ - 15 \qquad \qquad - 15 \\ \hline \end{array}$$

$$\begin{array}{r} 9 = 1.5x \\ \hline 1.5 \quad \hline 1.5 \end{array}$$

$$x = 6 \text{ yrs}$$

Homework
One and Two-Step
Equation Worksheet

Part 2

Add a Step!

Order of Steps

1st: Combine Like Terms

2nd: Cancel with addition or subtraction

3rd: Cancel with multiplication or division

Learning Target: Solve Multi-Step Equations

Solve

$$8x - 6x - 25 = -35$$

Write these in your notes and solve

1st: Combine Like Terms

2nd: Cancel with + or -

3rd: Cancel with * or

3. $-4n - 8n + 17 = 23$

4. $-14x + 28 + 6x = -44$

Part 3

Add a Another Step!

1st: Use the Distributive Property

$$8(2n - 5) =$$

2nd: Combine Like Terms

3rd: Cancel with addition or subtraction

4th: Cancel with multiplication or division

Learning Target: Solve Multi-Step Equations

$$2 (1 - 5x) + 4 = - 8$$

Special Case: You MUST multiply first

$$\frac{4x-8}{6} = 12$$

$$-\frac{3b+12}{5} = 3$$

Write these in your notes and solve

5. $-3(x + 2) + 5x = -9$

6. $5 + 1.5(2d - 1) = 0.5$

To Solve a Multi-Step Equation

Order of Steps:

- 1st: Use the Distributive Property**
- 2nd: Combine Like Terms**
- 3rd: Cancel with + or \div**
- 4th: Cancel with * or \cdot**

Real-Life Application

Use the table to find the number of miles x you need to run on Friday so that the mean number of miles run per day is 1.5

| Day | Miles |
|-----------|-------|
| Monday | 2 |
| Tuesday | 0 |
| Wednesday | 1.5 |
| Thursday | 0 |
| Friday | x |

Homework:

You **MUST** copy the equation from the book and show each step in your solution!

Pg. 14 & 15

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#Don't be gettin' lazy on me now!

#your hand will not fall off if you copy the problem down.

#don't forget you use a pencil because it has an eraser.

