WARM-UP

1. Evaluate each expression given the following values: $x = 2$, $y = -1$

a) $4x + 3y$

$4(2) + 3(-1)$

$= 8 - 3$

$= \boxed{5}$

b) $2xy + 3xy - y$

$2(2)(-1) + 3(2)(-1) - (-1)$

$= -4 - 6 + 1$

$= -10 + 1$

$= \boxed{-9}$

2. Solve the following equations:

a) $-14 + y = 30$

$y = 30 + 14$

$\boxed{y = 44}$

b) $10 = 4 - x$

$x = 4 - 10$

$\boxed{x = -6}$

UNIT 1: Solving Algebraic Equations

Solving One and Two-Step Equations

Learning Goal:

I will learn how to solve one and two-step equations.

Lesson A: Solving One-Step Equations

Solve each equation below.

Solution: Use the opposite operation to isolate the variable.

Examples Divide to "undo" multiplication

a) $3u = 12$

$\frac{3u}{3} = \frac{12}{3}$

$\boxed{u = 4}$

b) $-22 = -2a$

$\frac{-22}{-2} = \frac{-2a}{-2}$

$\boxed{11 = a}$

c) $-4x = 24$

$\frac{-4x}{-4} = \frac{24}{-4}$

$\boxed{x = -6}$

Solution: Cross multiply!

d) $\frac{1}{2}y = 4$

$\boxed{y = 8}$

e) $\frac{1}{4}x = -5$

$\boxed{x = -20}$

f) $\frac{1}{8}a = \frac{3}{4}$

$4a = 24$

$\frac{4a}{4} = \frac{24}{4}$

$\boxed{a = 6}$

Your Turn!

Work with a partner to solve the **"Did You Hear About"** puzzle worksheet. Use a **separate piece** of paper to show your work.

Be sure to check your solutions by making sure your answer can be found in the puzzle.

Lesson B: Solving Two-Step Equations

+ move to other side + change signs

Solve the equation:

a) $2x - 3 = 1$ → $2x = 1 + 3$ → $\frac{2x}{2} = \frac{4}{2}$ → $x = 2$

b) $9 = 7 - 2y$ → $2y = 7 - 9$ → $\frac{2y}{2} = \frac{-2}{2}$ → $y = -1$

c) $\frac{w}{5} - 5 = 5$ → $\frac{w}{5} = 5 + 5$ → $\frac{w}{5} = 10$ → $w = 50$

Now you try!

d) $3x - 5 = 7$ → $3x = 7 + 5$ → $\frac{3x}{3} = \frac{12}{3}$ → $x = 4$

e) $11 = 5x + 6$ → $11 - 6 = 5x$ → $\frac{5}{5} = \frac{5x}{5}$ → $1 = x$

f) $\frac{a}{8} - 3 = 7$ → $\frac{a}{8} = 7 + 3$ → $a = 10 \cdot 8$ → $a = 80$

UNIT 1: Solving Algebraic Equations

Solving Two-Step Equations

Learning Goal:

I will learn how to solve two-step equations.

Success Criteria:

To be successful, I must be able to...

- Use opposite operations to isolate the variable to solve the equation

Example:

$2w - 3 = 11$

$2w = 11 + 3$

$\frac{2w}{2} = \frac{14}{2}$

$w = 7$

Homework:

"**Did You Hear About**" and "**Solving Equations Partner Play**" worksheets

Solving Equations Partner Play!

INSTRUCTIONS:

1. You MUST work with a partner

2. One partner will solve the equations #1-10 in Column A.

3. The other partner will the equations #1-10 in Column B.

4. Show ALL work on a separate piece of paper.

5. After each question, check your solution with your partner. Although the equations are different, the solutions should be the same. Example: Question #1 in Column A should have the same answer as question #1 in Column B.

6. If you do NOT have the same answers, then work together to find the mistakes.

7. Submit all your work to me once complete.