

Problem of the Day: Solve the following equations.

a) $4x - 20 = -4 + 5$ b) $x - 5 = -3$ c) $-6 = -2 + x$

$x = 3$ $x = 2$ $x = -4$

Plan for the Day:

Integer quiz - first one that counts for a grade
 Notes on solving two-step equations
 More practice with solving two-step equations
 Objective: We will be able to solve two-step equations.
 Today is National Dog Day and National Cherry Popsicle Day!!

Solving an equation with both a constant and a coefficient means we need to undo the order of operations.

~~X~~ Spring ↑
~~X~~ Dec.
 MD
 AS

Rules:

1. move what is further away from the variable first (normally the constant)
 -use inverse (opposite) operation
 -do it to both sides of the equation
2. move what is next to the variable (normally the coefficient)
 -use opposite operation
 -do it to both sides of the equation
3. plug in answer and check

Example: $4x - 3 = 13$

$+3 \quad +3$

$4x = 16$

$\frac{4x}{4} = \frac{16}{4}$

$x = 4$

✓ $4 \cdot 4 - 3 = 13$
 $16 - 3 = 13$
 $13 = 13$

Example 1:

$3x + 6 = 15$

$3x + 6 = 15$
 $9 + 6 = 15$
 $24 = 15$

$3x + 6 = 15$

$-6 \quad -6$

$3x = 9$

$\frac{3x}{3} = \frac{9}{3}$

$x = 3$

✓ $3 \cdot 3 + 6 = 15$
 $9 + 6 = 15$
 $15 = 15$

Example 2:

$4x - 8 = -28$

$4x - 8 = -28$
 $20 - 8 = -28$
 $-28 = -28$

$4x - 8 = -28$

$+8 \quad +8$

$4x = -20$

$\frac{4x}{4} = \frac{-20}{4}$

$x = -5$

✓ $4 \cdot -5 - 8 = -28$
 $-20 - 8 = -28$
 $-28 = -28$

Example 3:

$9 + 3x = 24$

$-9 + 3x = 24$
 $-9 + 33 = 24$
 $24 = 24$

$3x = 33$

$\frac{3x}{3} = \frac{33}{3}$

$x = 11$

✓ $9 + 3 \cdot 11 = 24$
 $9 + 33 = 24$
 $24 = 24$

Example 4:

$-7 = -5 + 2x$

$-7 = -5 + 2x$
 $-7 = -5 - 2$
 $-7 = -7$

$+5 \quad +5$

$-2 = 2x$

$\frac{-2}{2} = \frac{2x}{2}$

$-1 = x$

✓ $-7 = -5 + 2 \cdot -1$
 $-7 = -5 - 2$
 $-7 = -7$

Sum it up - Get into groups of 2, 3, or 4 people. Each person should work 1 problem (if in a group of 2 or 3, then 2 problems). Add the answers together. Write your answer in the middle of the paper. Have one person bring the paper up to Mrs. Brown to have her check the answer. If the middle number is correct, you are able to move onto to another paper! If it is not correct, you will go back to your group and switch problems to see if you can get the correct answer.