**Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Per.\_\_\_\_\_\_\_ Score:\_\_\_\_\_**

**U1 CW #3** Solving Multi-Step Linear Equations

Today we will continue our work with equations. There are some equations that you can solve in your head quickly or on paper without too much difficulty. Let’s look at a few.

What operation(s) would you use to solve the following equation: $ 3x=12 $?

 Solve the equation showing all your steps. Verify your solution.

What operation(s) would you use to solve the following equation: $ 2x-2=14 $?

 Solve the equation showing all your steps. Verify your solution.

Other equations are more complicated. Solving some equations without writing anything down is difficult and frustrating! That’s because these equations contains not just a variable and constants, but also simplified expressions, terms with parentheses, and/or fractions.

These are types of equations are called multi-step equations; equations that take several steps to solve. Although multi-step equations take more time and more operations, they can still be simplified and solved by applying basic algebraic rules. For example, distribution, combining like terms, and using inverse operations.

What operation(s) would you use to solve the following equation: $ 4x+3x-1=6 $?

 Solve the equation showing all your steps. Verify your solution.

What operation(s) would you use to solve the following equation: $2-3\left(x-1\right)=11 $?

 Solve the equation showing all your steps. Verify your solution.

What operation(s) would you use to solve the following equation: $ \frac{x-3}{2}+\frac{1}{2}=12 $?

 Solve the equation showing all your steps. Verify your solution.

**Find, Fix, and Justify the Mistake:** In the following problems, a common mistake has been made. Circle the mistake and describe the mistake in words. Then, solve the equation correctly.

|  |  |
| --- | --- |
|   $2x+4x-2=20$ Combine like terms (2*x* and 4*x*)$ 6x-2=20$ Combine like terms (6*x* and -2) $4x=20$ Divide by 4 $x=5$  | **Explanation of mistake** (in words):**Solve correctly.** |

**Solving Multi-Step Equations Scavenger Hunt**

Around the room you will find 12 equations. You will use the skills we practiced so far as you solve these equations.

**Directions:** Simplify each equation to it most simple form and solve, showing all your work. Record your work and answer in the correctly numbered box on the answer sheet. Circle your final answer. Once you have an answer to a question, find that answer on the top of another question card. This is the next problem you must solve. You may start at any problem.

Hint: If you cannot find the answer you have and have checked all 12 problems, go back and check your work. You may have made an error. Use your classwork notes to help you.