Algebra 1 (CCSP)

Section 1.3: Solving Two-Step and Multi-Step Equations

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Objectives**: Students will be able to solve one-step equations in one variable by using multiplication and division.

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| **Main Idea** | **Notes** |
| **Exploration:** | 1.3 Exploration: Solving Equations by Multiplying or Dividing |
| **Solving Equations:** | Solving equations with multiplication and division is similar to solving equations with  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  Isolate the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ by using \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ operations.  Keep the equation \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_! |
| **Example 1: Solving Equations Using Multiplication** | Solve for the variable. Show all of your work! |
| **Example 2: Solving Equations Using Division** | Solve for the variable. Show all of your work!   1. 7x = 56 2. 13 = -2w 3. –4.8 = –6v |
| **Multiplying by the Reciprocal:** | Dividing is the same thing as multiplying by the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  This may be easier than \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  This is usually the case with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_! |
| **Example 3: Solving Equations with Fractions** | Solve for the variable. Show all of your work! |
| **Example 4: Solving Equations with a Negative in Front of the Variable** | Solve for the variable. Show all you work!   1. –x = 3      1. -5 = -m      1. –s = -1 |
| **Multiplication and Division Properties of Equality:** | You can multiply (or divide) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of an equation by a  non-zero number, and the statement will \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. |
| **Example 5: Real-World Application** | The distance (in miles) from the airport that a plane should begin descending, divided by 3, equals the plane’s height above the ground (in thousands of feet).  If a plane is 10,000 feet above the ground, write and solve an equation to find the distance the pilot should begin descending. |
| **Homework:** | 1.3 Additional Practice Worksheet |