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!1. $-4=\frac{k}{-5}$
2. $\frac{m}{3}=1.5$
3. $-8=\frac{j}{3}$
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| **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
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| **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!1. $\frac{5}{6}w= -20$
2. $\frac{3}{16}=\frac{1}{8}z$
3. $\frac{5}{9}v=35$
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| **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
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| **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 |