MULTI-STEP EQUATIONS
Finding How Many Solutions
Color by Number

NAME: ______________________ DATE: ________ CLASS: __________

Multi-Step Equations - How Many Solutions?
Directions: Solve each equation for the missing variable. You must try to find one solution. Circle the correct answer and color the corresponding area on the map.

1. \(-6x - 5 = -6x + 13\)
   \(x = \frac{12}{12}\) Brown
   No solution Red
   \(x = \) Or

2. \(13 + 2k = 3k + 4(k - 3)\)
   \(k = 5\) Yellow
   \(k = -5\) Black
   \(k = \) 1

3. \(-5(-5 + 4k) = -23 - 8a\)
   \(a = -4\) Orange
   \(a = \frac{1}{4}\) Yellow

4. \(2x + 12 = 2(x + 6)\)
   \(x = 0\) Orange
   \(x = \) Infinite Solutions Pink
   \(x = \) 0

5. \(8n - 2(n + 5) = -3 + 6n\)
   \(n = -13\) Yellow
   \(n = 13\) Red

6. \(-6 - 6x = -6(x + 3)\)
   \(x = \) No solution Light Blue
   \(x = \) 0

7. \(-4(5 + 3x) = -30 - 7x\)
   \(x = 2\) Lt. Green
   \(x = \) 2

8. \(-7(n + 2) = -14 - 4n\)
   \(n = 14\) Green
   \(n = \) 14

9. \(4 - 7n = -(8n + 4) + 2\)
   \(n = -6\) Blue
   \(n = \) -6

10. \(7n + 12 = \frac{1}{2}(4n + 24)\)
    \(n = \) No solution Purple
    \(n = \) Brown

Hayley Cain
ACTIVITY after MATH

This activity was created by Hayley Cain as a fun and engaging way to practice multi-step equations. It includes various equations that students must solve and then color according to the solutions they find.
**About this product:**

--Included in this product:
- Worksheet with 10 problems (4 One Solution, 3 NO Solution, and 3 Infinite Solutions)
- Coloring Picture
- Option to have both on one page (side by side)
- Answer Key to problems page
- Colored Answer Key of Picture

Students will solve 10 Multi-Step Equations with Variables on BOTH sides. When they get their answer they will look at the boxes on the right. Whatever answer matches the answer they got they will color that problem number the corresponding color.

This is a fun way to review Multi-Step Equations with Variables on BOTH sides and color a picture! This also makes a great substitute plans activity or can be used as a review!

I hope you enjoy! Happy Teaching!
You may also like:

- Variables on BOTH sides! Multi-Step Equations Task Cards with QR Codes
- MATH MOVIE Questions BUNDLE - Great end of the year activity!
- Coordinate Graphing Mystery Picture Bundle
- LIGHTBOX SLIDES Inspirational Quotes
- Multi-Step Equations with Variables on Both Sides Color by Number

Click the pictures to check it out!
### Multi-Step Equations - How Many Solutions?

Directions: Solve each equation for the missing variable. You must show ALL your work!

Circle the correct answer and color the corresponding areas on the coloring sheet.

<table>
<thead>
<tr>
<th>Equation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. [-(6x - 5) = -6x + 13]</td>
</tr>
<tr>
<td>2. [13 + 2k = 3k + 4(k - 3)]</td>
</tr>
<tr>
<td>3. [-5(-5 + 4a) = -23 - 8a]</td>
</tr>
<tr>
<td>4. [2x + 12 = 2(x + 6)]</td>
</tr>
<tr>
<td>5. [8n - 2(n + 5) = -3 + 6n]</td>
</tr>
<tr>
<td>6. [-16 - 6x = -6(x + 3)]</td>
</tr>
<tr>
<td>7. [-4(5 + 3x) = -30 -7x]</td>
</tr>
<tr>
<td>8. [-7(n + 2) = -14 - 7n]</td>
</tr>
<tr>
<td>9. [4 - 7n = -(8n + 4) + 2]</td>
</tr>
<tr>
<td>10. [7n + 12 = \frac{1}{2}(14n + 24)]</td>
</tr>
</tbody>
</table>
Directions: Solve each equation for the missing variable. You must show all your work.

Circle the correct answer and color the corresponding boxes on the coloring sheet.

**Multi-Step Equations - How Many Solutions?**

<table>
<thead>
<tr>
<th>Equation</th>
<th>Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ( x - 6 = 5 )</td>
<td>1</td>
</tr>
<tr>
<td>2. ( 13 + 2K = 3K + H(K - 3) )</td>
<td>2</td>
</tr>
<tr>
<td>3. ( 5 - 3 + 9(4) = -23 - 8A )</td>
<td>No</td>
</tr>
<tr>
<td>4. ( 2(n + 5) = -3 + 6n )</td>
<td>1</td>
</tr>
<tr>
<td>5. ( 28n - 2(n + 5) = -3 + 6n )</td>
<td>No</td>
</tr>
<tr>
<td>6. ( 16 - 6x = -6(x + 3) )</td>
<td>No</td>
</tr>
<tr>
<td>7. ( -H + 6x = -6(x + 3) )</td>
<td>1</td>
</tr>
<tr>
<td>8. ( -7n + Z = -4n + 4y )</td>
<td>No</td>
</tr>
<tr>
<td>9. ( n = 6 )</td>
<td>1</td>
</tr>
<tr>
<td>10. ( 7n + 12 = \frac{1}{2}(14n + 24) )</td>
<td>1</td>
</tr>
</tbody>
</table>

**Coloring Sheet Instructions:***
NAME: ___________________________ DATE: ________ CLASS: ________

**Multi-Step Equations - How Many Solutions? KEY**

Directions: Solve each equation for the missing variable. You must show ALL your work!
Circled the correct answer and color the corresponding areas on the coloring sheet.

<table>
<thead>
<tr>
<th>Equation</th>
<th>x or a</th>
<th>Solution</th>
<th>Color</th>
<th>Infinite Solutions</th>
<th>No solution</th>
<th>Directions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. (-6x - 5) = (-6x + 13)</td>
<td>(x = \frac{17}{12}) Brown</td>
<td>No solution Red</td>
<td>Infinite Solutions Yellow</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. (13 + 2k = 3k + 4(k - 3))</td>
<td>(k = 5) Yellow</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. (-5(-5 + 4a) = -23 - 8a)</td>
<td>(a = -4) Orange</td>
<td></td>
<td>Infinite Solutions Purple</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. (2x + 12 = 2(x + 6))</td>
<td>(x = 0) Orange</td>
<td>Infinite Solutions Pink</td>
<td>No solution Blue</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. (8n - 2(n + 5) = -3 + 6n)</td>
<td>(n = -13) Yellow</td>
<td></td>
<td>Infinite Solutions Orange</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. (-16 - 6x = -6(x + 3))</td>
<td>No solution Lt. Blue</td>
<td>(x = -\frac{1}{6}) Blue</td>
<td>Infinite Solutions Lt. Green</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. (-4(5 + 3x) = -30 - 7x)</td>
<td>(x = 2) Lt. Green</td>
<td>(x = -10) Red</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. (-7(n + 2) = -14 - 7n)</td>
<td>(n = 14) Green</td>
<td>Infinite Solutions Pink</td>
<td>Purple</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. (4 - 7n = -(8n + 4) + 2)</td>
<td>(n = -6) Blue</td>
<td>(n = 6) Red</td>
<td>No solution Brown</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. (7n + 12 = \frac{1}{2}(14n + 24))</td>
<td>No solution Purple</td>
<td>(n = 0) Brown</td>
<td>(n = 6) Green</td>
<td>Infinite Solutions Red</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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HAPPY TEACHING!

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