

# Solving Rational Expression Equations

## Color By Number Activity

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Period: \_\_\_\_\_

### Solving Rational Expression Equations

**Directions:** Solve each equation. Remember to check for extraneous solutions. Write your answer in the box below and use the color indicated to color match the problem number.

1.  $\frac{4}{x^2+3x} = \frac{5}{x^2+3x} + \frac{1}{p+3}$

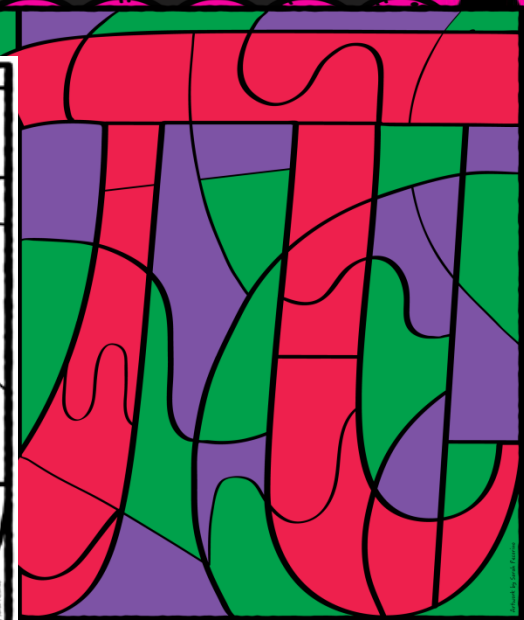
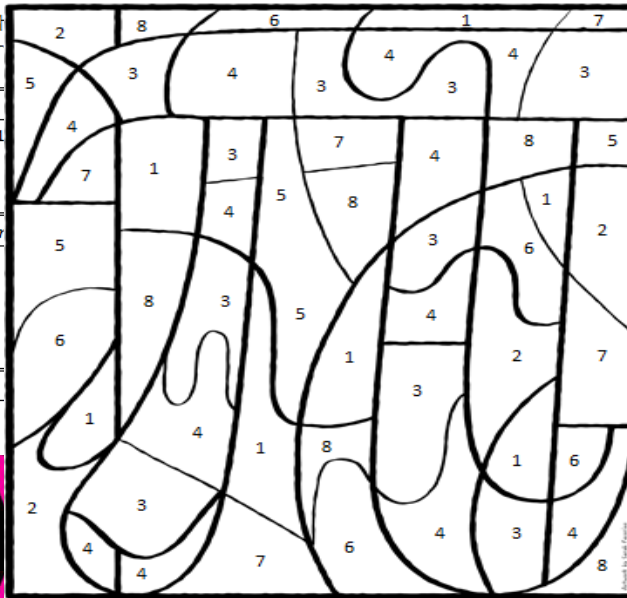
2.  $\frac{1}{m-10} - \frac{1}{m^2-1}$

3.  $\frac{1}{n^2+11n+18} = \frac{3}{2n^2+22n+36} + \frac{3}{2n+4}$

4.  $1 = \frac{1}{r+5} + \frac{5}{r-5}$

5.  $9m + 18 = \frac{1}{7} - \frac{4m+36}{7m}$

6.  $\frac{9n-45}{n^2+6n} = \frac{1}{n}$



# Solving Rational Expression Equations

- STUDENTS WILL PRACTICE SOLVING EQUATIONS INVOLVING RATIONAL EXPRESSIONS. ONCE A STUDENT HAS COMPLETED THE PROBLEM, THEY WILL MATCH THEIR ANSWER TO ONE OF THE ANSWERS PROVIDED. THE MATCHING ANSWER HAS A COLOR ABOVE IT, WHICH THE STUDENTS WILL THEN COLOR ALL NUMBERED SEGMENTS WITH THAT COLOR.
- STUDENTS WILL HAVE TO SOLVE EQUATIONS INVOLVING RATIONAL EXPRESSIONS. THERE ARE 5 PROBLEMS WHERE SOLVING A QUADRATIC EQUATION IS NECESSARY AND 3 WHERE IT IS NOT.
- SUGGESTION FOR USE: PRINT AND COPY BOTH PROBLEM SETS AND COLORING PAGE SINGLE SIDED. HAVE STUDENTS SHOW THEIR WORK ON THE BACK OF THE PROBLEM SET, CHECKING TO MAKE SURE THEIR ANSWERS SHOW UP IN THE ANSWER BOX. THEN, ONCE STUDENTS HAVE COMPLETED ALL 8 PROBLEMS, GIVE THEM THE COLORING PAGE TO COLOR IN. I LIKE TO DO THIS TO MAKE SURE STUDENTS DON'T SPEND TOO MUCH TIME "PERFECTING" THEIR COLORING SKILLS AND NOT PERFECTING THEIR MATH SKILLS! 😊

Name: \_\_\_\_\_

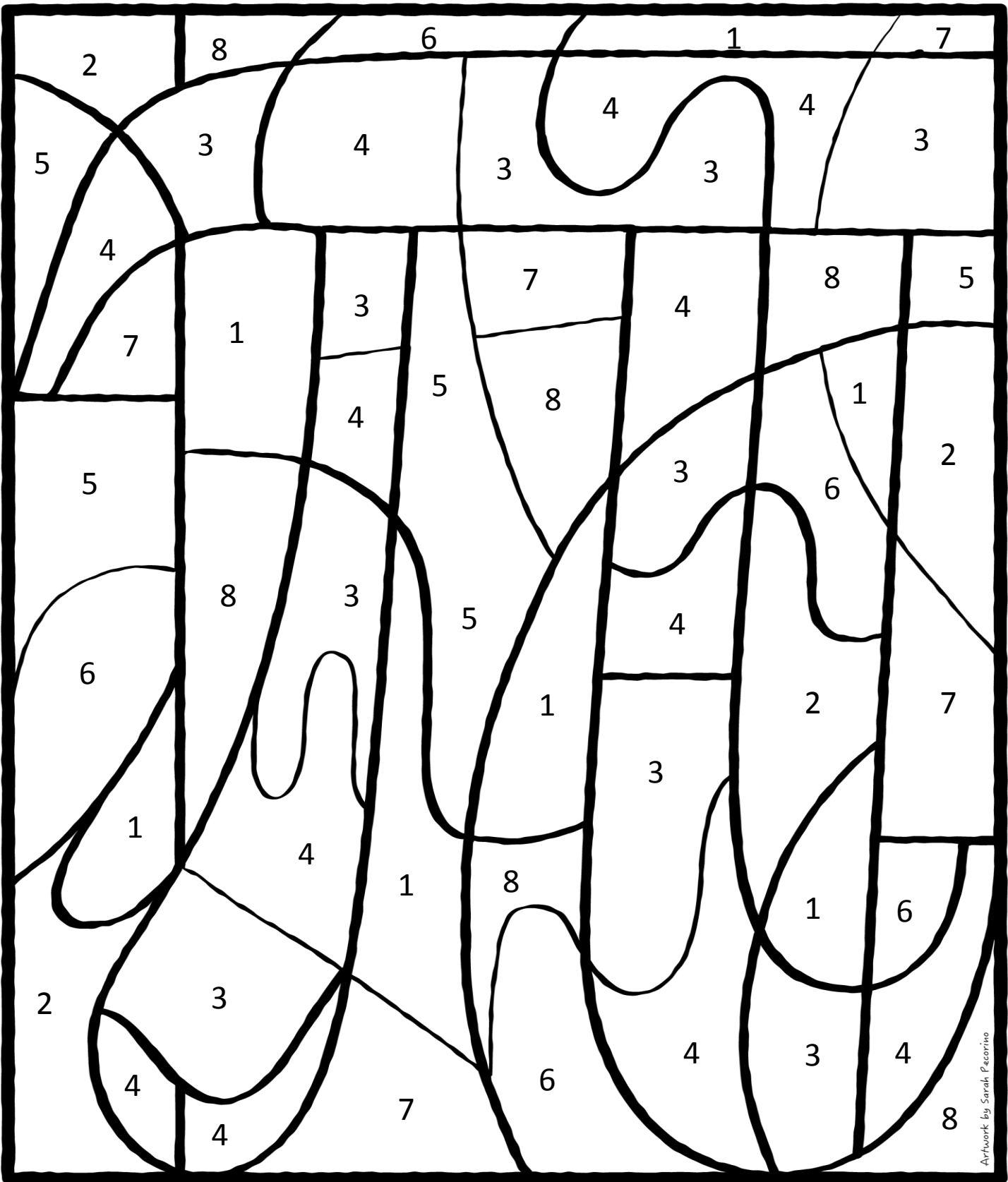
Date: \_\_\_\_\_ Period: \_\_\_\_\_

# Solving Rational Expression Equations

**Directions:** Solve each equation. Remember to check for extraneous solutions. Find your answer in the box below and use the color indicated to color all numbered sections that match the problem number.

1. $\frac{4}{x^2+3x} = \frac{5}{x^2+3x} + \frac{1}{x+3}$	2. $\frac{1}{m-10} - \frac{1}{m^2-10m} = \frac{10}{m^2-10m}$
3. $\frac{1}{n^2+11n+18} = \frac{3}{2n^2+22n+36} + \frac{3}{2n+4}$	4. $1 = \frac{1}{r+5} + \frac{5r^2+21r+4}{r+5}$
5. $9m + 18 = \frac{1}{7} - \frac{4m+36}{7m}$	6. $\frac{9n-45}{n^2+6n} = \frac{1}{n} - 1$
7. $\frac{x^2+13x+40}{x^2-2x-8} - \frac{1}{x+2} = \frac{4x^2+36x+80}{x^2-2x-8}$	8. $\frac{k+5}{k-1} - \frac{1}{k^2-8k+7} = 1$

$\left\{\frac{43}{6}\right\}$ Purple	$\{11\}$ Light Blue	$\{-6, -2\}$ Orange	$\{-4, 0\}$ Yellow	$\left\{1, \frac{43}{6}\right\}$ Light Green
$\left\{-\frac{1}{3}, -\frac{12}{7}\right\}$ Red	$\{-5, 0\}$ Brown	$\{10, 11\}$ Light Blue	$\{-6\}$ Dark Green	$\left\{-2, -\frac{28}{3}\right\}$ Brown
$\{-1, -3\}$ Dark Blue	$\{-2\}$ Dark Green	$\{-17, 3\}$ Dark Blue	$\{-1\}$ Pink	$\left\{-\frac{28}{3}\right\}$ Orange



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**Directions:** Solve each equation. Remember to check for extraneous solutions. Find your answer in the box below and use the color indicated to color all numbered sections that match the problem number.

1. $\frac{4}{x^2+3x} = \frac{5}{x^2+3x} + \frac{1}{p+3}$  $\{-1\}$	2. $\frac{1}{m-10} - \frac{1}{m^2-10m} = \frac{10}{m^2-10m}$  $\{11\}$
3. $\frac{1}{n^2+11n+18} = \frac{3}{2n^2+22n+36} + \frac{3}{2n+4}$  $\{-\frac{28}{3}\}$	4. $1 = \frac{1}{r+5} + \frac{5r^2+21r+4}{r+5}$  $\{-4, 0\}$
5. $9m + 18 = \frac{1}{7} - \frac{4m+36}{7m}$  $\{-\frac{1}{3}, -\frac{12}{7}\}$	6. $\frac{9n-45}{n^2+6n} = \frac{1}{n} - 1$  $\{-17, 3\}$
7. $\frac{x^2+13x+40}{x^2-2x-8} - \frac{1}{x+2} = \frac{4x^2+36x+80}{x^2-2x-8}$  $\{-6\}$	8. $\frac{k+5}{k-1} - \frac{1}{k^2-8k+7} = 1$  $\{\frac{43}{6}\}$

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