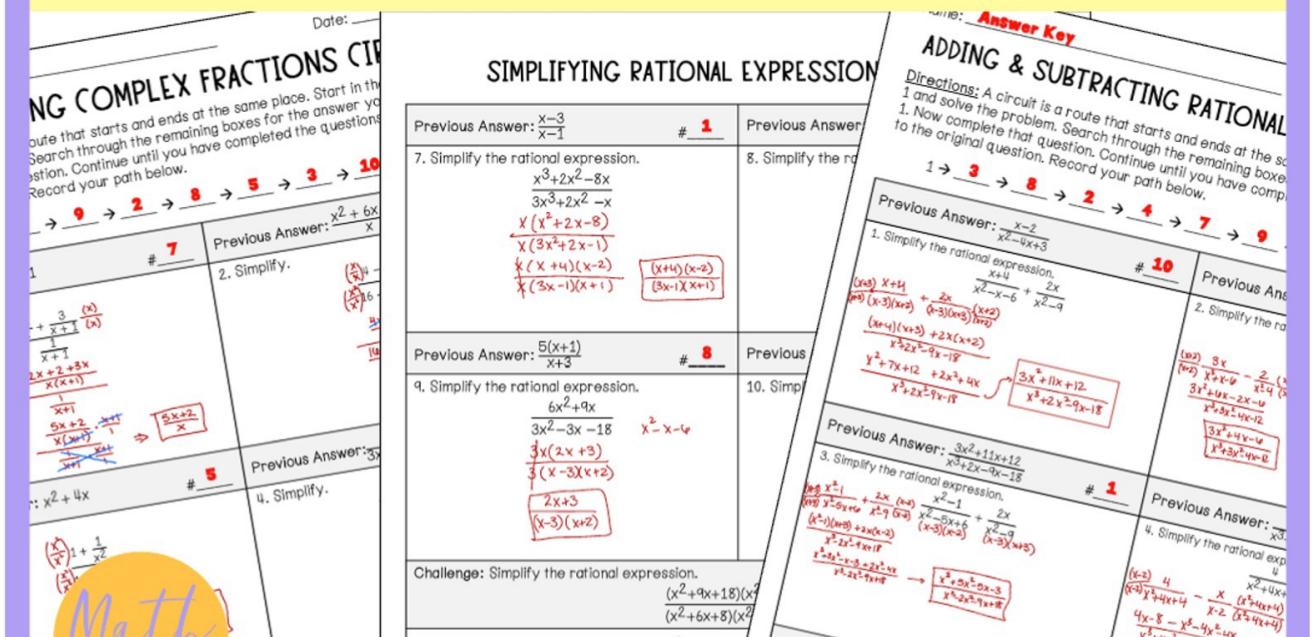
keep scrolling to get a sneak peek!

Help your Algebra students practice applying various skills to **rational functions.**

This bundle of circuit worksheets will help your students review these skills throughout the unit, while also being able to self check their work!

RATIONAL FUNCTIONS DIFFERENTIATED CIRCUITS

Unit Worksheet Bundle



5 TOPICS + 2 Versions Each + Answer Keys

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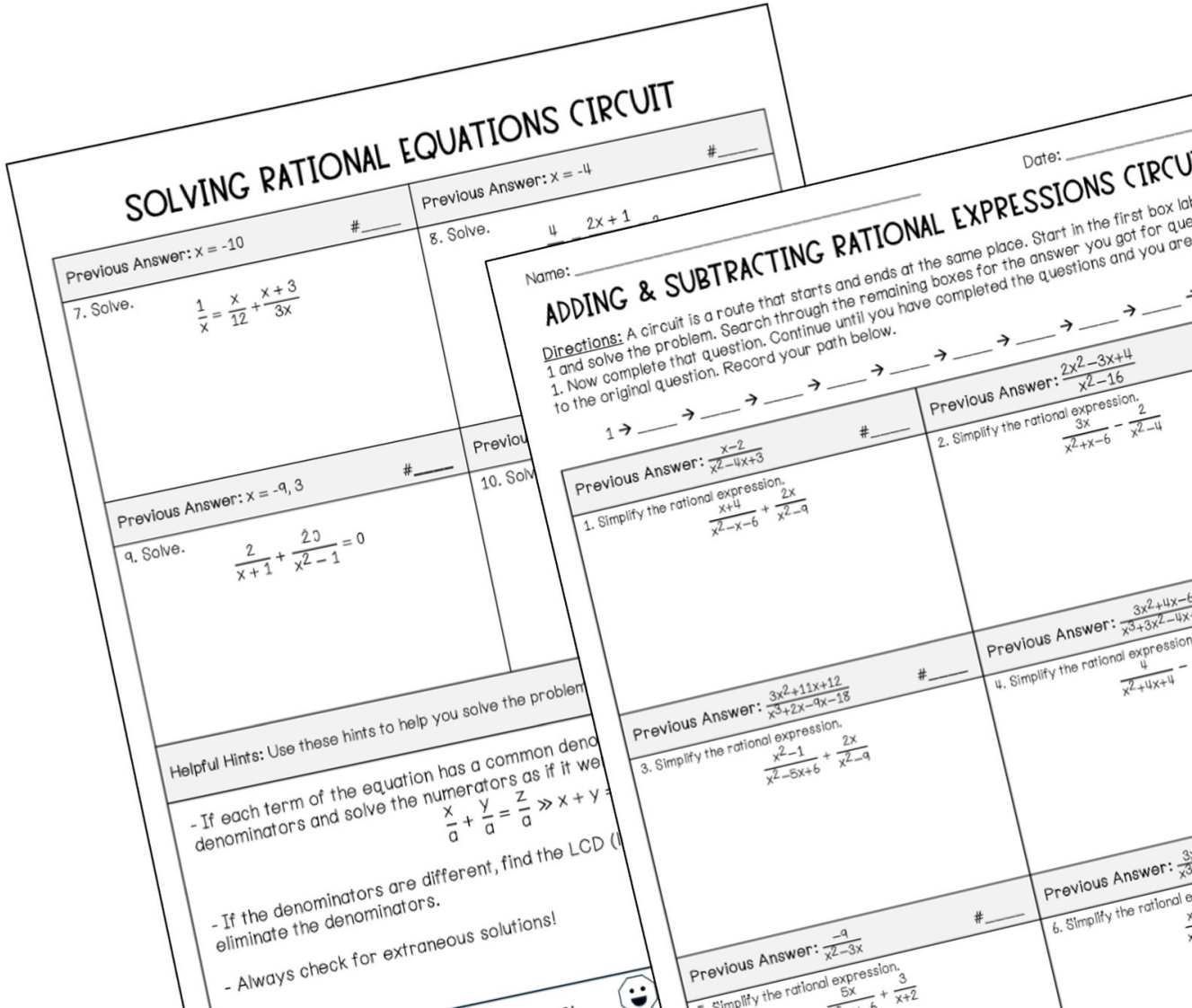
Why do you need this?

Rational Functions Unit Circuit Worksheets

- It's self-checking! Your students will know if they are correct or not.
- 2 differentiated versions for all students practice this essential math skill.



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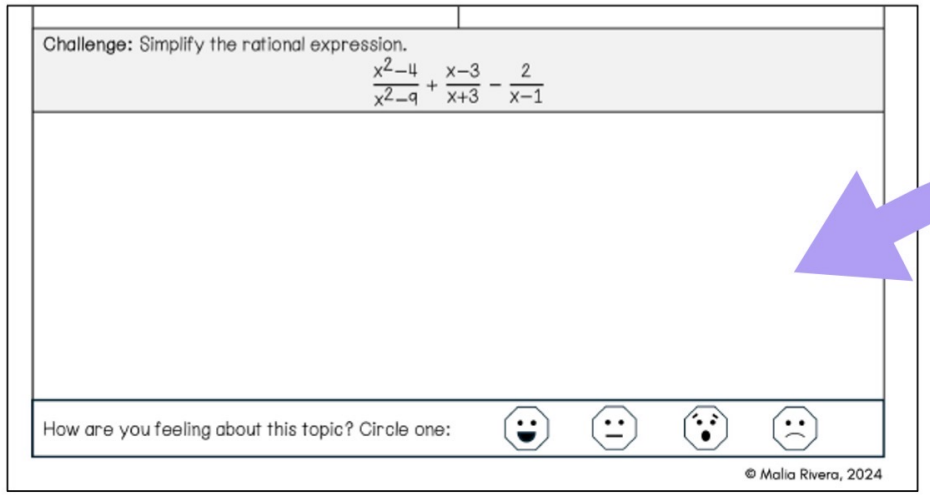
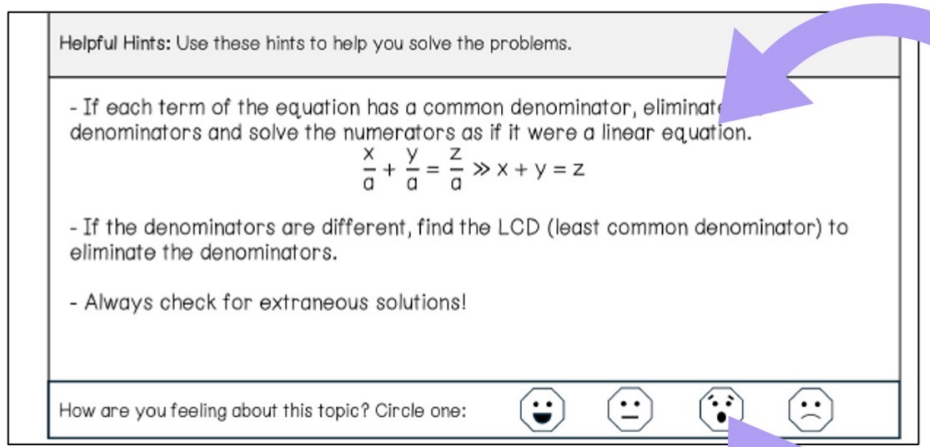
Each Rational Functions Circuit *includes*:





- ✅ 10 self-checking problems
- ✅ a detailed answer key
- ✅ a standard version with an extension question
- ✅ a basic version with helpful hints section
- ✅ student self assessment

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Rational Functions Unit Circuit Worksheets

skills covered:

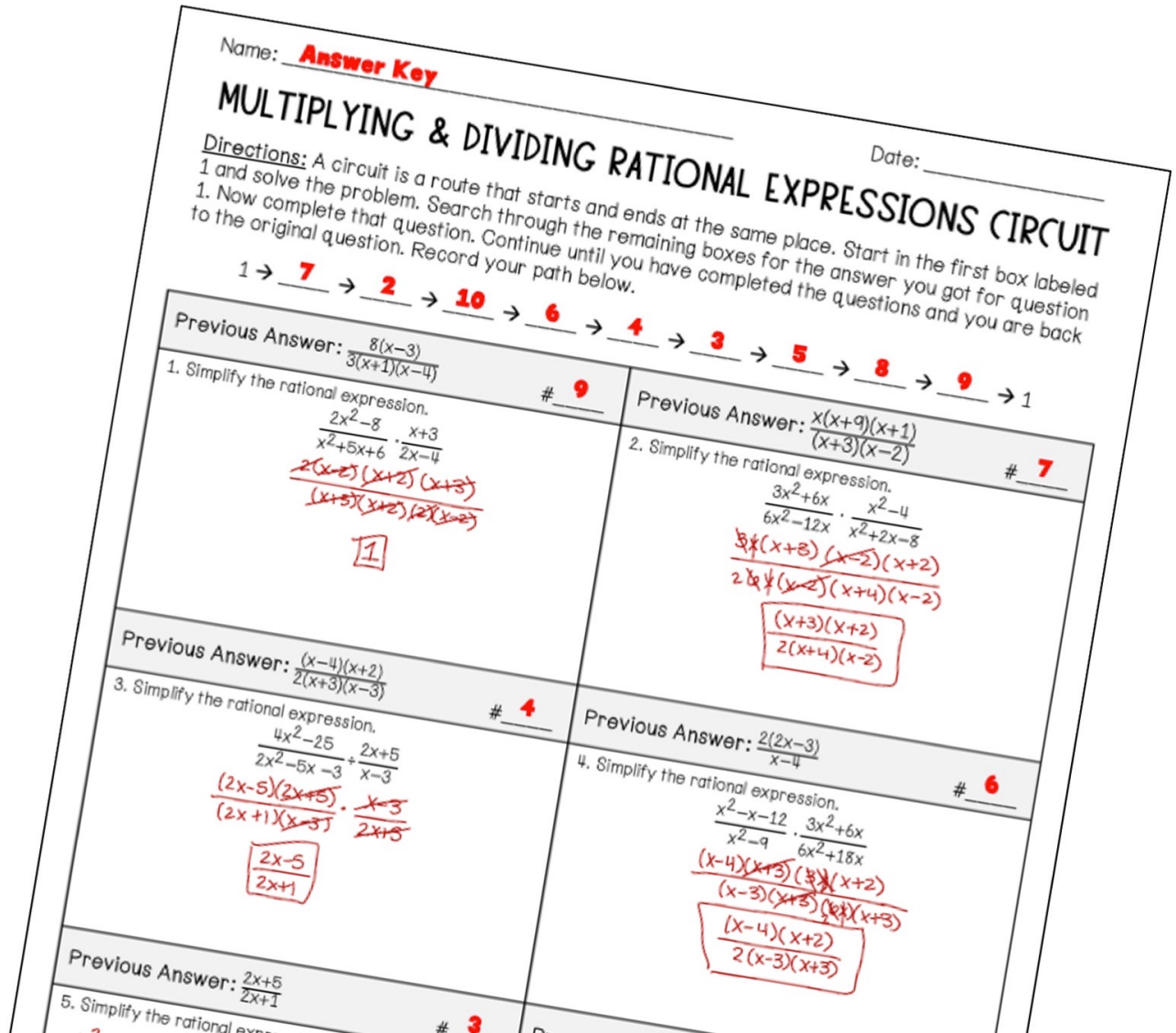
Simplifying Rational Expressions

Multiplying & Dividing

Adding & Subtracting

Simplifying Complex Fractions

Solving Rational Equations


Name: Answer Key

MULTIPLYING & DIVIDING RATIONAL EXPRESSIONS CIRCUIT

Date:

Directions: A circuit is a route that starts and ends at the same place. Start in the first box labeled 1 and solve the problem. Search through the remaining boxes for the answer you got for question 1. Now complete that question. Continue until you have completed the questions and you are back to the original question. Record your path below.

1 → 7 → 2 → 10 → 6 → 4 → 3 → 5 → 8 → 9 → 1

Previous Answer: $\frac{8(x-3)}{3(x+1)(x-4)}$

1. Simplify the rational expression. #9

$\frac{2x^2-8}{x^2+5x+6} \cdot \frac{x+3}{2x-4}$

$\frac{2(x-2)(x+2)(x+3)}{(x+3)(x+2)(2)(x-2)}$

1

Previous Answer: $\frac{x(x+9)(x+1)}{(x+3)(x-2)}$

2. Simplify the rational expression. #7

$\frac{3x^2+6x}{6x^2-12x} \cdot \frac{x^2-4}{x^2+2x-8}$

$\frac{3x(x+2)(x-2)(x+2)}{2\cdot 3x(x-2)(x+4)(x-2)}$

$\frac{(x+2)(x+2)}{2(x+4)(x-2)}$

Previous Answer: $\frac{(x-4)(x+2)}{2(x+3)(x-3)}$

3. Simplify the rational expression. #4

$\frac{4x^2-25}{2x^2-5x-3} \div \frac{2x+5}{x-3}$

$\frac{(2x-5)(2x+5)}{(2x+1)(x-3)} \cdot \frac{x-3}{2x+5}$

$\frac{2x-5}{2x+1}$

Previous Answer: $\frac{2(2x-3)}{x-4}$

4. Simplify the rational expression. #6

$\frac{x^2-x-12}{x^2-9} \cdot \frac{3x^2+6x}{6x^2+18x}$

$\frac{(x-4)(x+3)(3x)(x+2)}{(x-3)(x+3)(6x)(x+3)}$

$\frac{(x-4)(x+2)}{2(x-3)(x+3)}$

Previous Answer: $\frac{2x+5}{2x+1}$

5. Simplify the rational expression. #3

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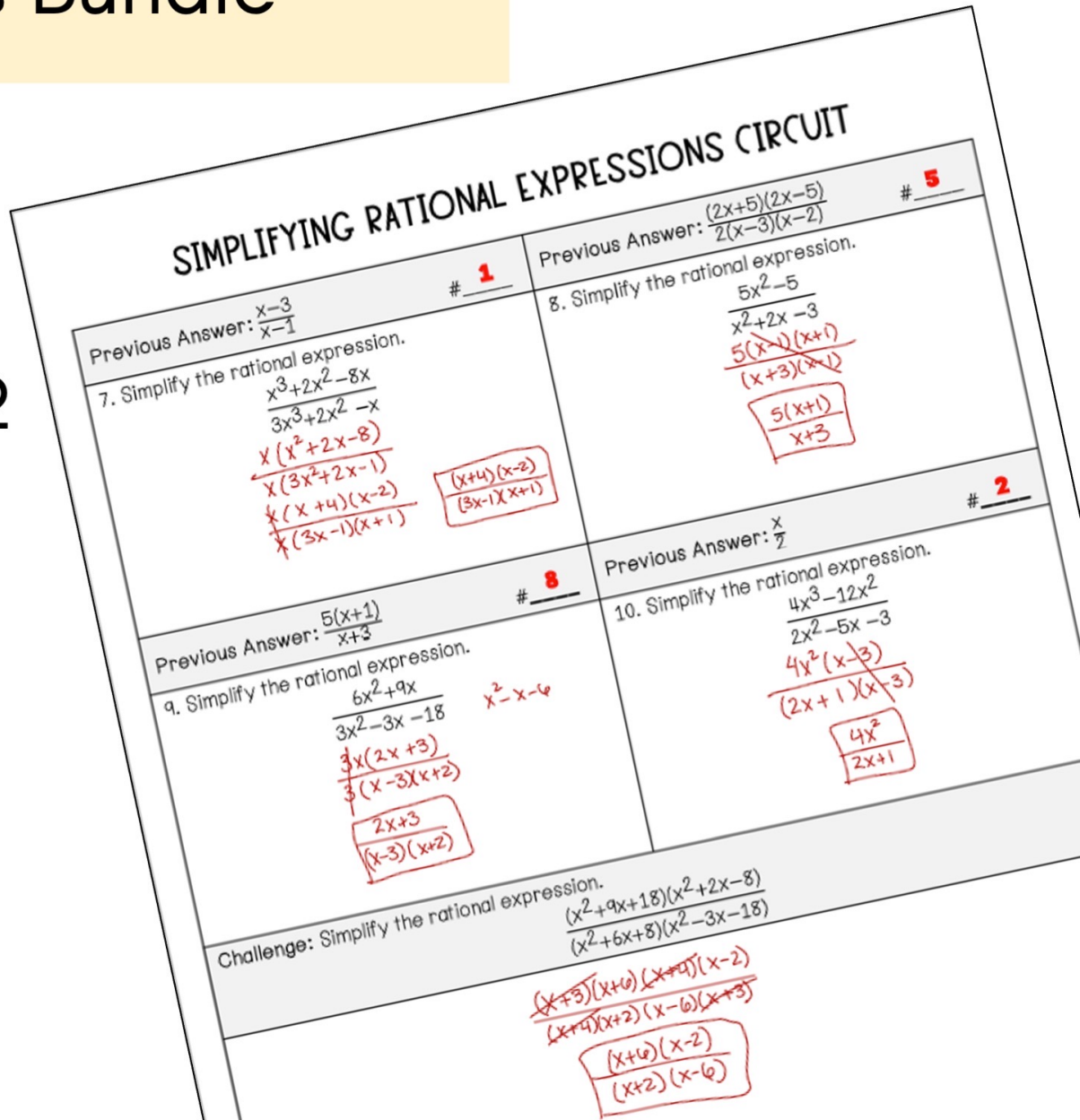
Rational Functions Unit Circuits Bundle

standards covered:

CCSS: HSA-SSE.B.3, HSA-REI.A.2

TEKs: A2.7.F, A2.6.I, A2.6.J

VA SOLs: EO.AII.1.a, EI.AII.3.c



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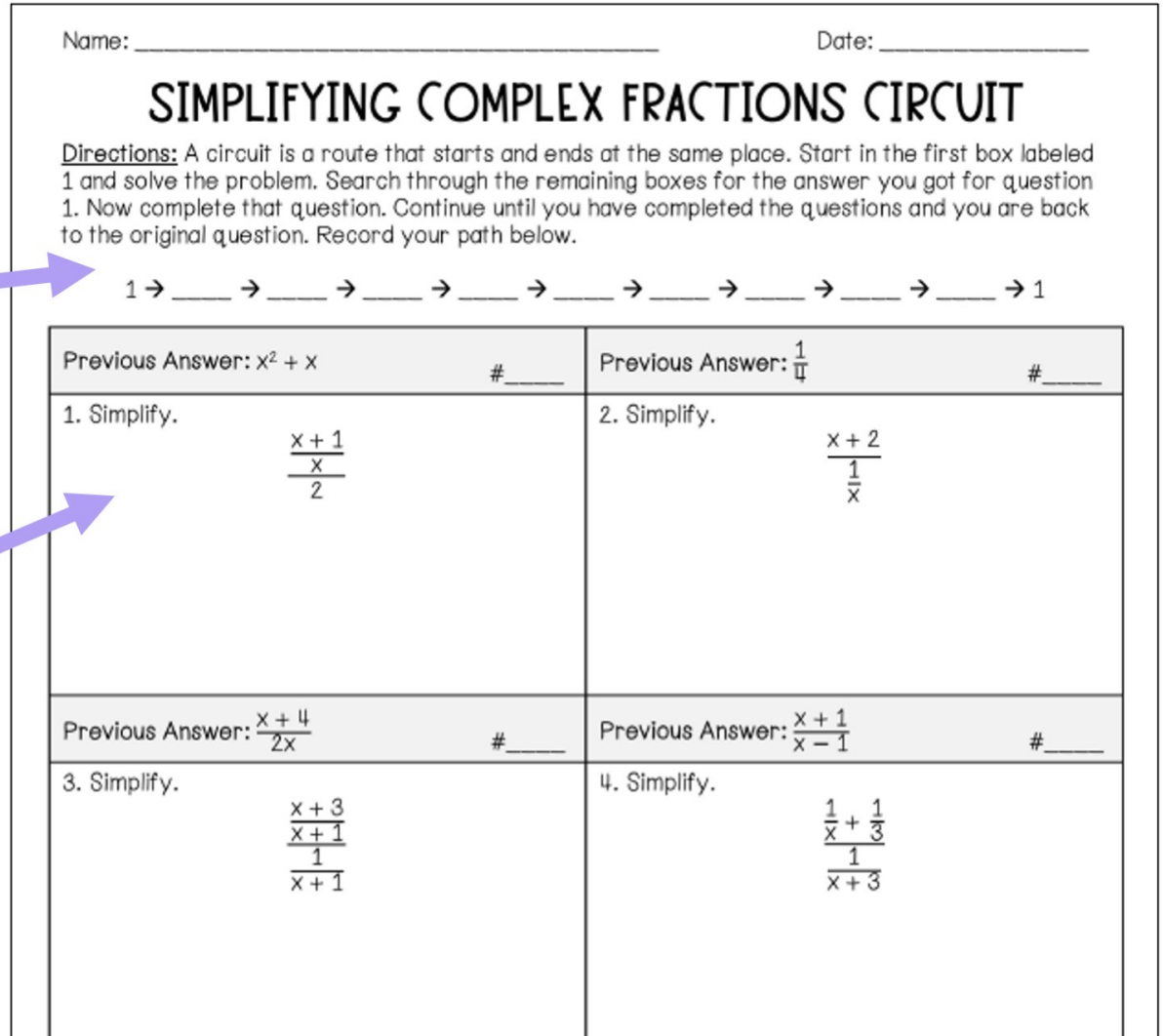
how this circuit resource works

Students can track their path at the top.

Students start with the first question.



Name: _____ Date: _____

SIMPLIFYING COMPLEX FRACTIONS CIRCUIT

Directions: A circuit is a route that starts and ends at the same place. Start in the first box labeled 1 and solve the problem. Search through the remaining boxes for the answer you got for question 1. Now complete that question. Continue until you have completed the questions and you are back to the original question. Record your path below.

1 → ____ → ____ → ____ → ____ → ____ → ____ → ____ → ____ → ____ → 1

Previous Answer: $x^2 + x$ #____	Previous Answer: $\frac{1}{4}$ #____
1. Simplify. $\frac{\frac{x+1}{x}}{2}$	2. Simplify. $\frac{x+2}{\frac{1}{x}}$
Previous Answer: $\frac{x+4}{2x}$ #____	Previous Answer: $\frac{x+1}{x-1}$ #____
3. Simplify. $\frac{\frac{x+3}{x+1}}{\frac{1}{x+1}}$	4. Simplify. $\frac{\frac{1}{x}+\frac{1}{3}}{\frac{1}{x+3}}$

Then search for their answer on the worksheet. Once the answer is found, students complete the problem below it.

The last question they answer should lead back to problem #1 to "close" the circuit.

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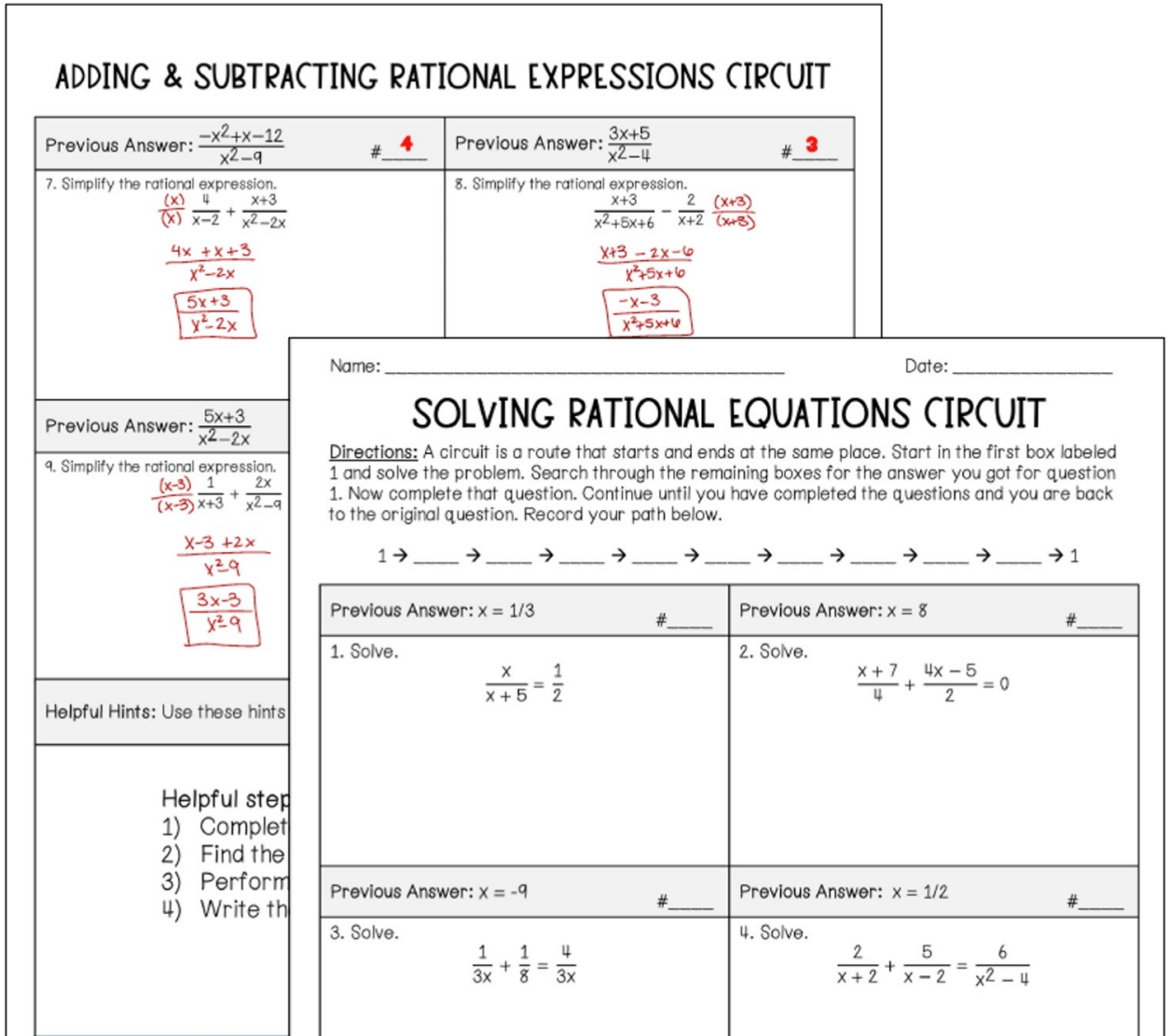
how to use this resource



ADDING & SUBTRACTING RATIONAL EXPRESSIONS CIRCUIT

Previous Answer: $\frac{-x^2+x-12}{x^2-9}$ #4

7. Simplify the rational expression.

$\frac{(x)}{(x)}\frac{4}{x-2}+\frac{x+3}{x^2-2x}$

$\frac{4x+x+3}{x^2-2x}$

$\frac{5x+3}{x^2-2x}$

Previous Answer: $\frac{3x+5}{x^2-4}$ #3

8. Simplify the rational expression.

$\frac{x+3}{x^2+5x+6}-\frac{2}{x+2}\frac{(x+3)}{(x+3)}$

$\frac{x+3-2x-6}{x^2+5x+6}$

$\frac{-x-3}{x^2+5x+6}$

Previous Answer: $\frac{5x+3}{x^2-2x}$

9. Simplify the rational expression.

$\frac{(x-3)}{(x-3)}\frac{1}{x+3}+\frac{2x}{x^2-9}$

$\frac{x-3+2x}{x^2-9}$

$\frac{3x-3}{x^2-9}$

Helpful Hints: Use these hints

Helpful step
1) Complet
2) Find the
3) Perform
4) Write th

Name: _____ Date: _____

SOLVING RATIONAL EQUATIONS CIRCUIT

Directions: A circuit is a route that starts and ends at the same place. Start in the first box labeled 1 and solve the problem. Search through the remaining boxes for the answer you got for question 1. Now complete that question. Continue until you have completed the questions and you are back to the original question. Record your path below.

1 → ____ → ____ → ____ → ____ → ____ → ____ → ____ → ____ → ____ → 1

Previous Answer: x = 1/3 #____

1. Solve.

$\frac{x}{x+5}=\frac{1}{2}$

Previous Answer: x = 8 #____

2. Solve.

$\frac{x+7}{4}+\frac{4x-5}{2}=0$

Previous Answer: x = -9 #____

3. Solve.

$\frac{1}{3x}+\frac{1}{8}=\frac{4}{3x}$

Previous Answer: x = 1/2 #____

4. Solve.

$\frac{2}{x+2}+\frac{5}{x-2}=\frac{6}{x^2-4}$

This is a great activity to use when reviewing and applying rational function skills.

It can be used right after teaching the concept, as homework, or review stations.

This is also a **substitute-friendly** assignment!

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hey there!

My name is Malia and I'm passionate about making learning and practicing math fun. I love creating engaging math resources for my students and I hope your students enjoy this activity too!

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