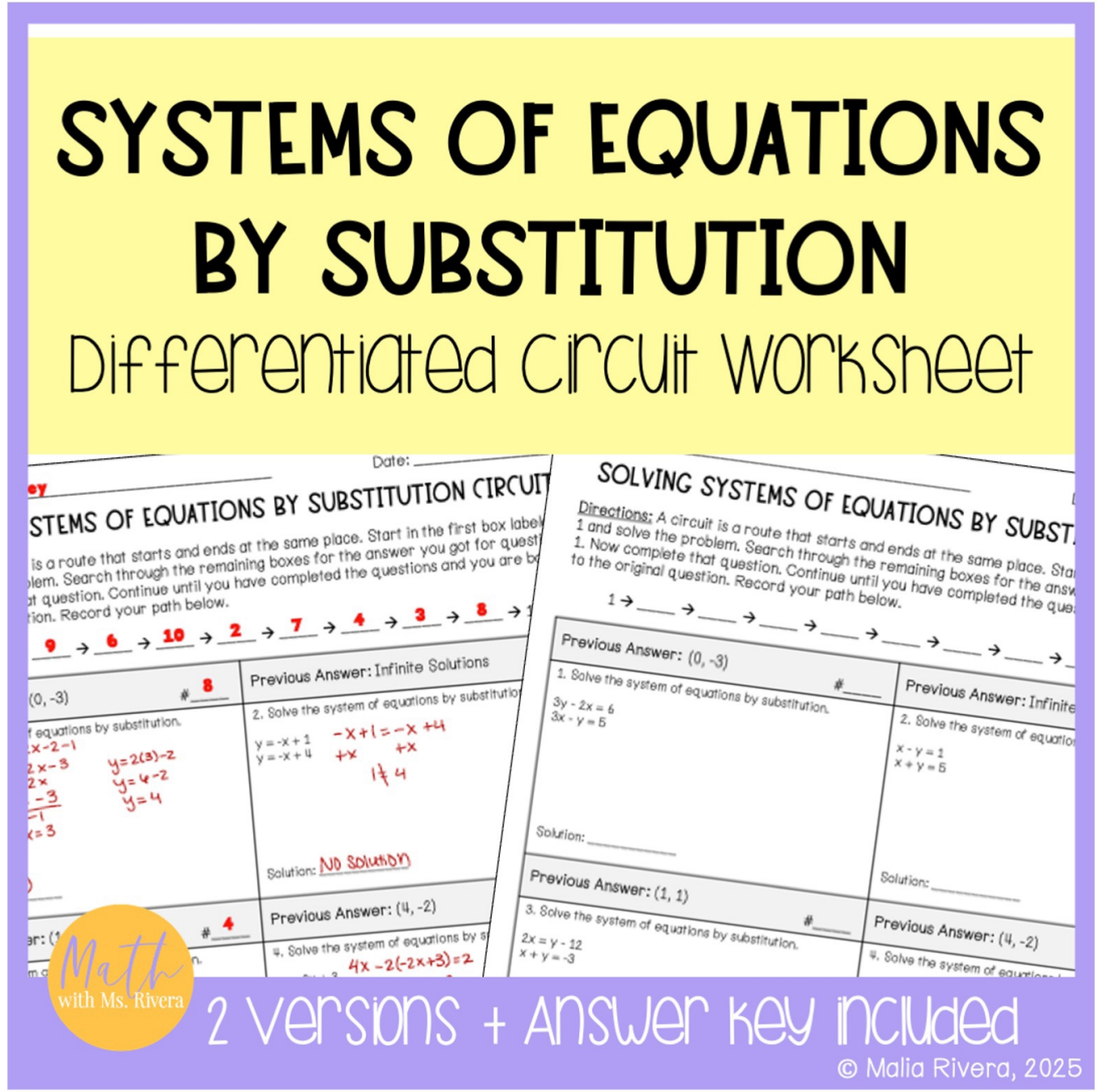
keep scrolling to get a sneak peek!

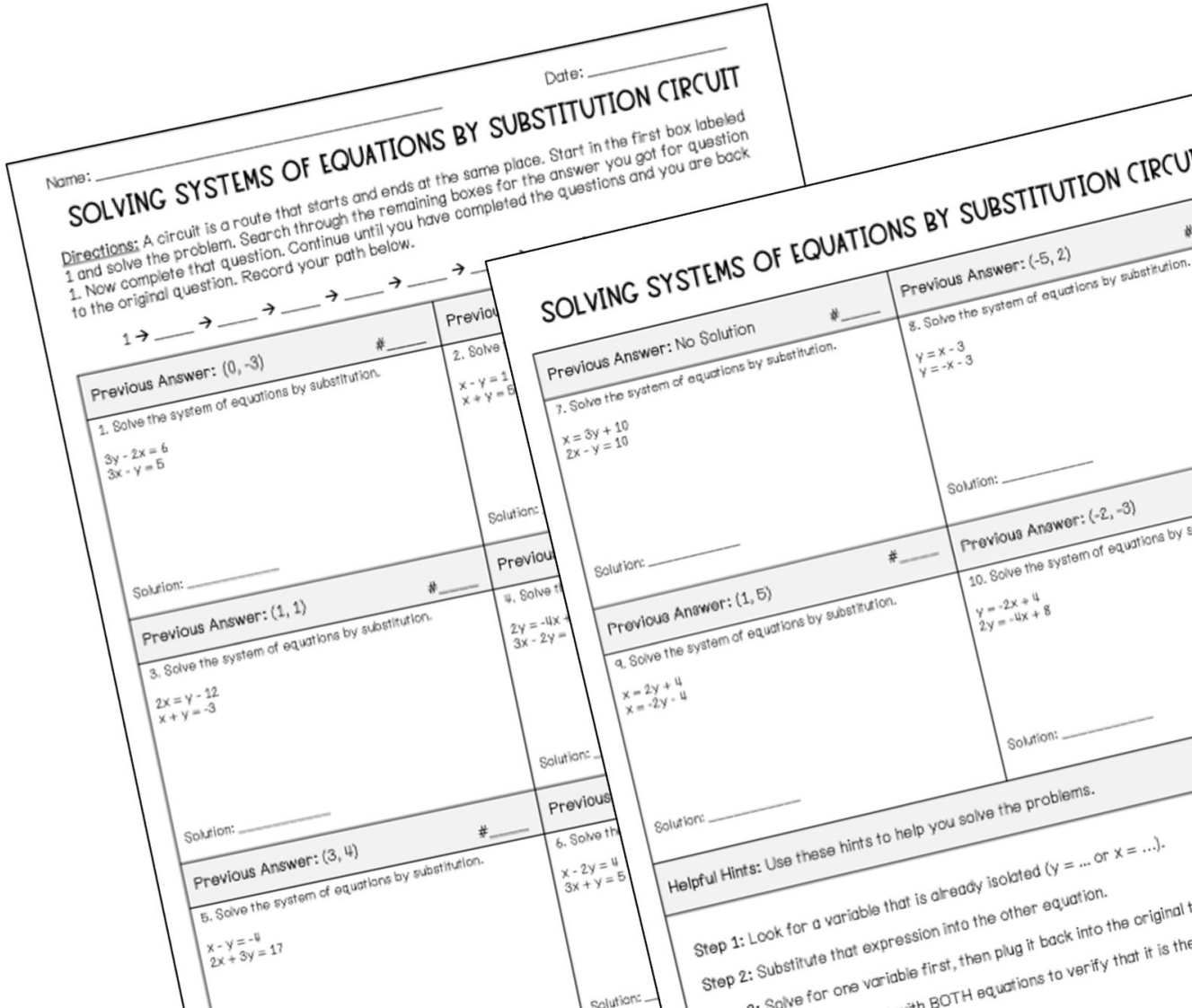
Help your Algebra 1 students practice **solving systems of equations by substitution** given points. Students will be eager to get the self-checking benefits from this circuit activity!



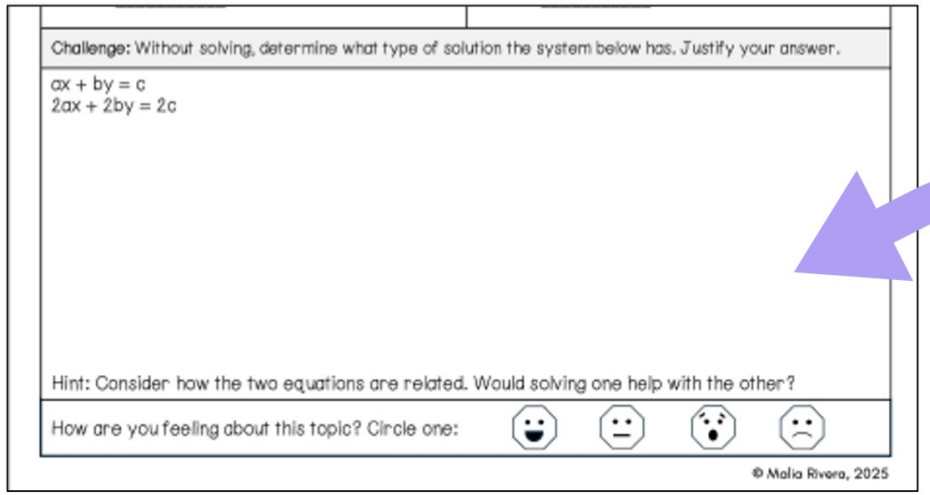
why do you need this?

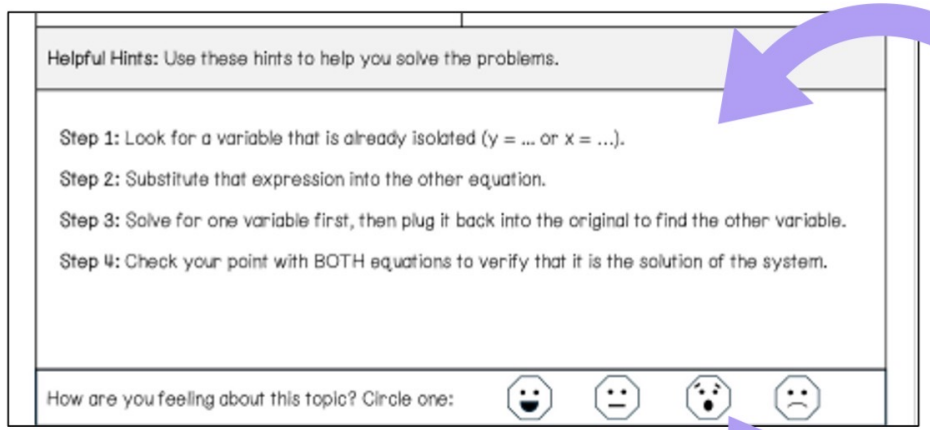
- It's self-checking! Your students will know if they are correct or not.
- 2 differentiated versions for all students practice this essential math skill.

Solving Systems of Equations by Substitution Circuit



Systems of Equations by Substitution 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

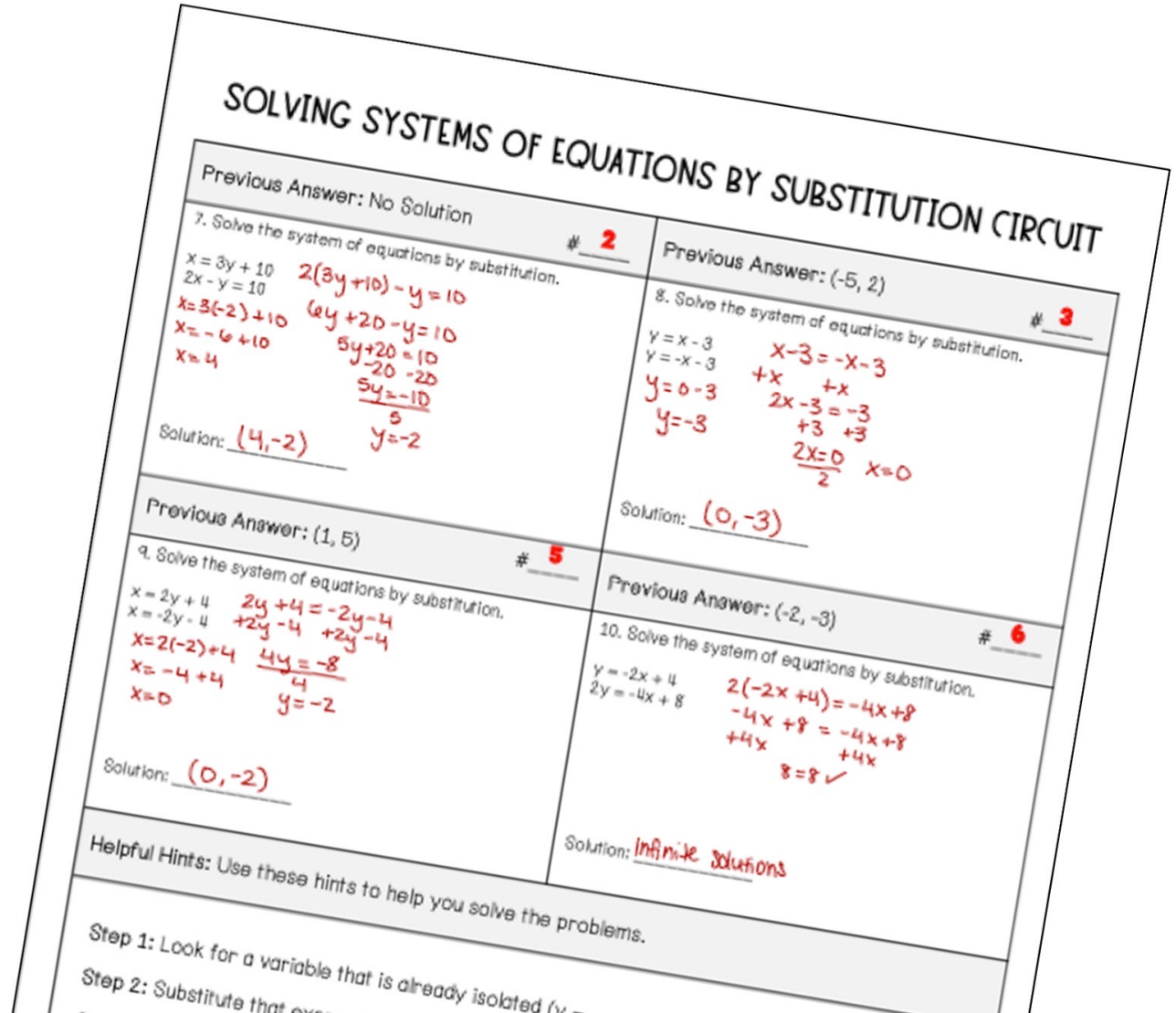
Systems of Equations by Substitution Circuit

standards covered:

CCSS: 8.EE.C.8.ab

TEKs: A1.5.C

VA SOLs: EI.A.4.d


SOLVING SYSTEMS OF EQUATIONS BY SUBSTITUTION CIRCUIT

Previous Answer: No Solution #2

7. Solve the system of equations by substitution.

$x = 3y + 10$
$2x - y = 10$

$2(3y+10) - y = 10$
$6y + 20 - y = 10$
$5y + 20 = 10$
$-20 \quad -20$
$\frac{5y}{5} = \frac{-10}{5}$
$y = -2$

$x = 3(-2) + 10$
$x = -6 + 10$
$x = 4$

Solution: (4, -2)

Previous Answer: (-5, 2) #3

8. Solve the system of equations by substitution.

$y = x - 3$
$y = -x - 3$

$x - 3 = -x - 3$
$+x \quad +x$
$2x - 3 = -3$
$+3 \quad +3$
$\frac{2x}{2} = \frac{0}{2}$
$x = 0$

$y = 0 - 3$
$y = -3$

Solution: (0, -3)

Previous Answer: (1, 5) #5

9. Solve the system of equations by substitution.

$x = 2y + 4$
$x = -2y - 4$

$2y + 4 = -2y - 4$
$+2y - 4 \quad +2y - 4$
$\frac{4y}{4} = \frac{-8}{4}$
$y = -2$

$x = 2(-2) + 4$
$x = -4 + 4$
$x = 0$

Solution: (0, -2)

Previous Answer: (-2, -3) #6

10. Solve the system of equations by substitution.

$y = -2x + 4$
$2y = -4x + 8$

$2(-2x + 4) = -4x + 8$
$-4x + 8 = -4x + 8$
$+4x \quad +4x$
$8 = 8$ ✓

Solution: Infinite solutions

Helpful Hints: Use these hints to help you solve the problems.

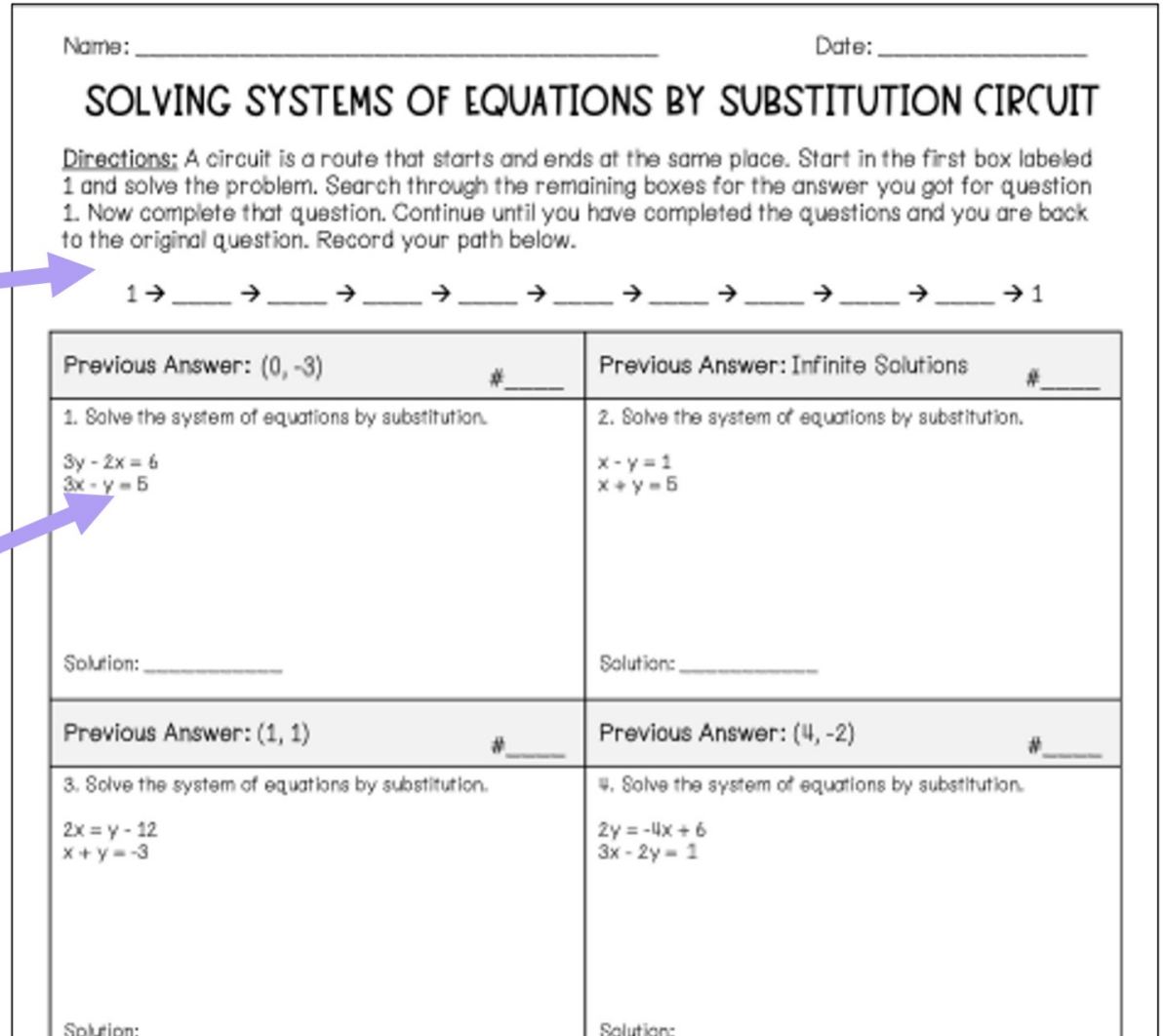
Step 1: Look for a variable that is already isolated (y

Step 2: Substitute that exp

how this circuit resource works

Students can track their path at the top.

Students start with the first question.



Name: _____ Date: _____

SOLVING SYSTEMS OF EQUATIONS BY SUBSTITUTION 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.

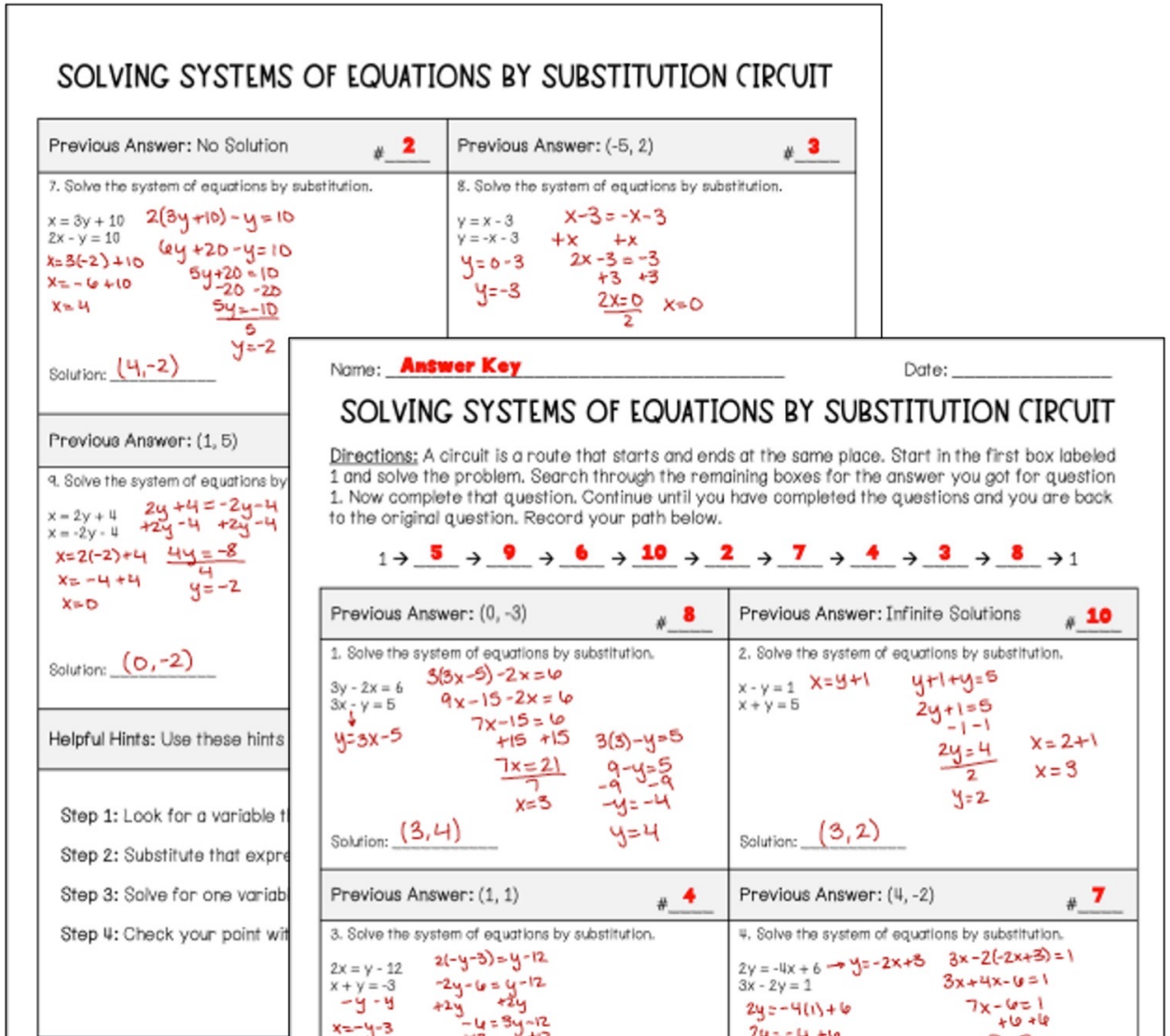
1 → ____ → ____ → ____ → ____ → ____ → ____ → ____ → ____ → ____ → 1

Previous Answer: (0, -3) #____	Previous Answer: Infinite Solutions #____
1. Solve the system of equations by substitution. $3y - 2x = 6$ $3x - y = 5$ Solution: _____	2. Solve the system of equations by substitution. $x - y = 1$ $x + y = 5$ Solution: _____
Previous Answer: (1, 1) #____	Previous Answer: (4, -2) #____
3. Solve the system of equations by substitution. $2x = y - 12$ $x + y = -3$ Solution:	4. Solve the system of equations by substitution. $2y = -4x + 6$ $3x - 2y = 1$ Solution:

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.

how to use this resource



SOLVING SYSTEMS OF EQUATIONS BY SUBSTITUTION CIRCUIT

Previous Answer: No Solution # 2

7. Solve the system of equations by substitution.

$x = 3y + 10$
$2x - y = 10$

$2(3y+10) - y = 10$
$6y + 20 - y = 10$
$5y + 20 = 10$
$-20 \quad -20$
$\frac{5y}{5} = \frac{-10}{5}$
$y = -2$

$x = 3(-2) + 10$
$x = -6 + 10$
$x = 4$

Solution: (4, -2)

Previous Answer: (-5, 2) # 3

8. Solve the system of equations by substitution.

$y = x - 3$
$y = -x - 3$

$x - 3 = -x - 3$
$+x \quad +x$
$2x - 3 = -3$
$+3 \quad +3$
$\frac{2x}{2} = \frac{0}{2}$
$x = 0$

$y = 0 - 3$
$y = -3$

Previous Answer: (1, 5)

9. Solve the system of equations by

$x = 2y + 4$
$x = -2y - 4$

$2y + 4 = -2y - 4$
$+2y - 4 \quad +2y - 4$
$\frac{4y}{4} = \frac{-8}{4}$
$y = -2$

$x = 2(-2) + 4$
$x = -4 + 4$
$x = 0$

Solution: (0, -2)

Helpful Hints: Use these hints

Step 1: Look for a variable t
Step 2: Substitute that expre
Step 3: Solve for one variab
Step 4: Check your point wit

Name: Answer Key Date: _____

SOLVING SYSTEMS OF EQUATIONS BY SUBSTITUTION 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 → 5 → 9 → 6 → 10 → 2 → 7 → 4 → 3 → 8 → 1

Previous Answer: (0, -3) # 8

1. Solve the system of equations by substitution.

$3y - 2x = 6$
$3x - y = 5$
$y = 3x - 5$

$3(3x-5) - 2x = 6$
$9x - 15 - 2x = 6$
$7x - 15 = 6$
$+15 \quad +15$
$\frac{7x}{7} = \frac{21}{7}$
$x = 3$

$3(3) - y = 5$
$9 - y = 5$
$-9 \quad -9$
$-y = -4$
$y = 4$

Solution: (3, 4)

Previous Answer: Infinite Solutions # 10

2. Solve the system of equations by substitution.

$x - y = 1$
$x + y = 5$
$x = y + 1$

$y + 1 + y = 5$
$2y + 1 = 5$
$-1 \quad -1$
$\frac{2y}{2} = \frac{4}{2}$
$y = 2$

$x = 2 + 1$
$x = 3$

Solution: (3, 2)

Previous Answer: (1, 1) # 4

3. Solve the system of equations by substitution.

$2x = y - 12$
$x + y = -3$
$-y \quad -y$
$x = -y - 3$

$2(-y-3) = y - 12$
$-2y - 6 = y - 12$
$+2y \quad +2y$
$-6 = 3y - 12$

Previous Answer: (4, -2) # 7

4. Solve the system of equations by substitution.

$2y = -4x + 6 \rightarrow y = -2x + 3$
$3x - 2y = 1$

$3x - 2(-2x+3) = 1$
$3x + 4x - 6 = 1$
$7x - 6 = 1$
$+6 \quad +6$

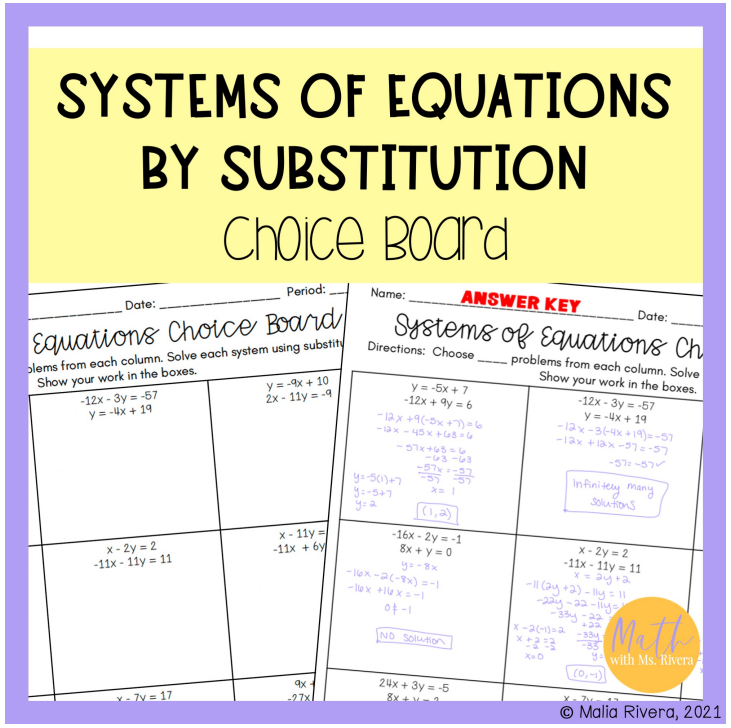
$2y = -4(1) + 6$

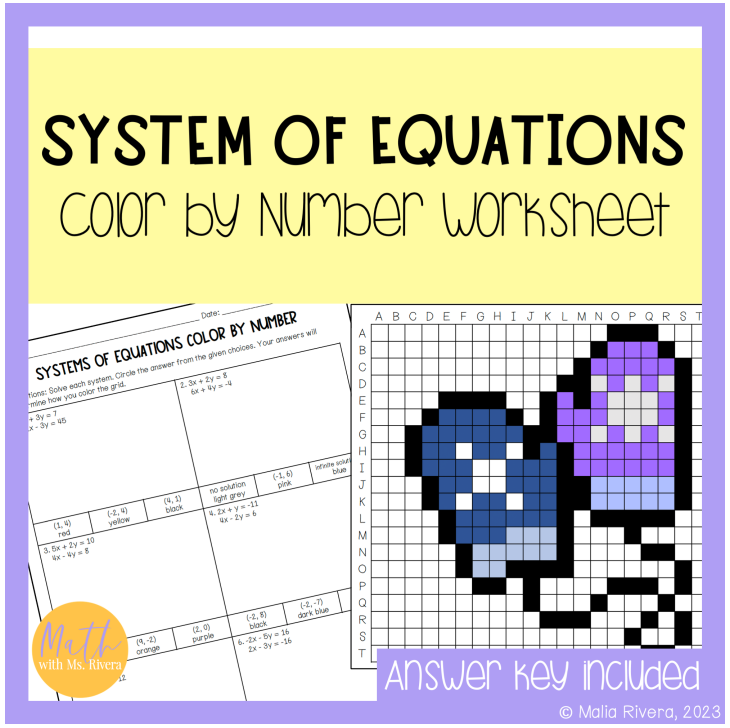
This is a great activity to use when reviewing how to solve systems of equations using the substitution method.

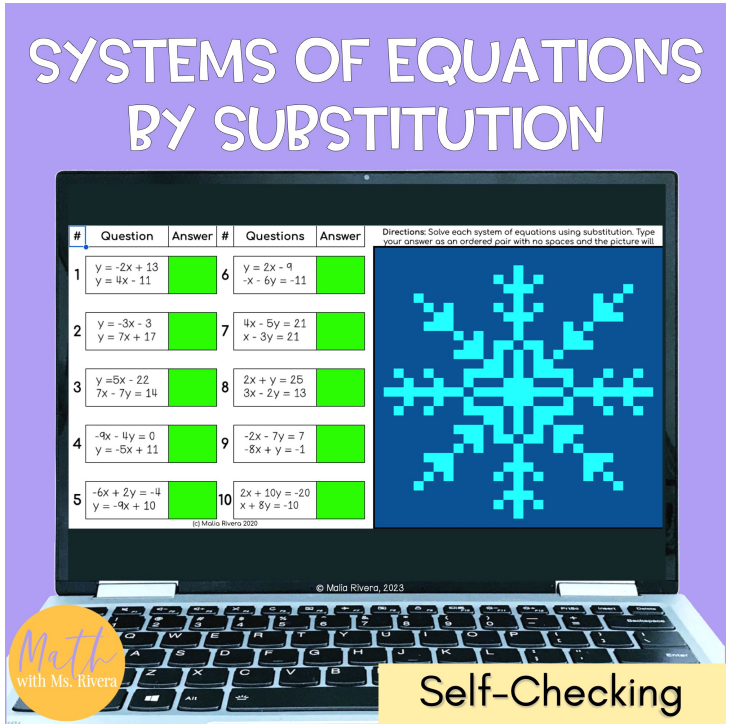
It can be used right after teaching the concept or as homework.

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

You may also *enjoy*...







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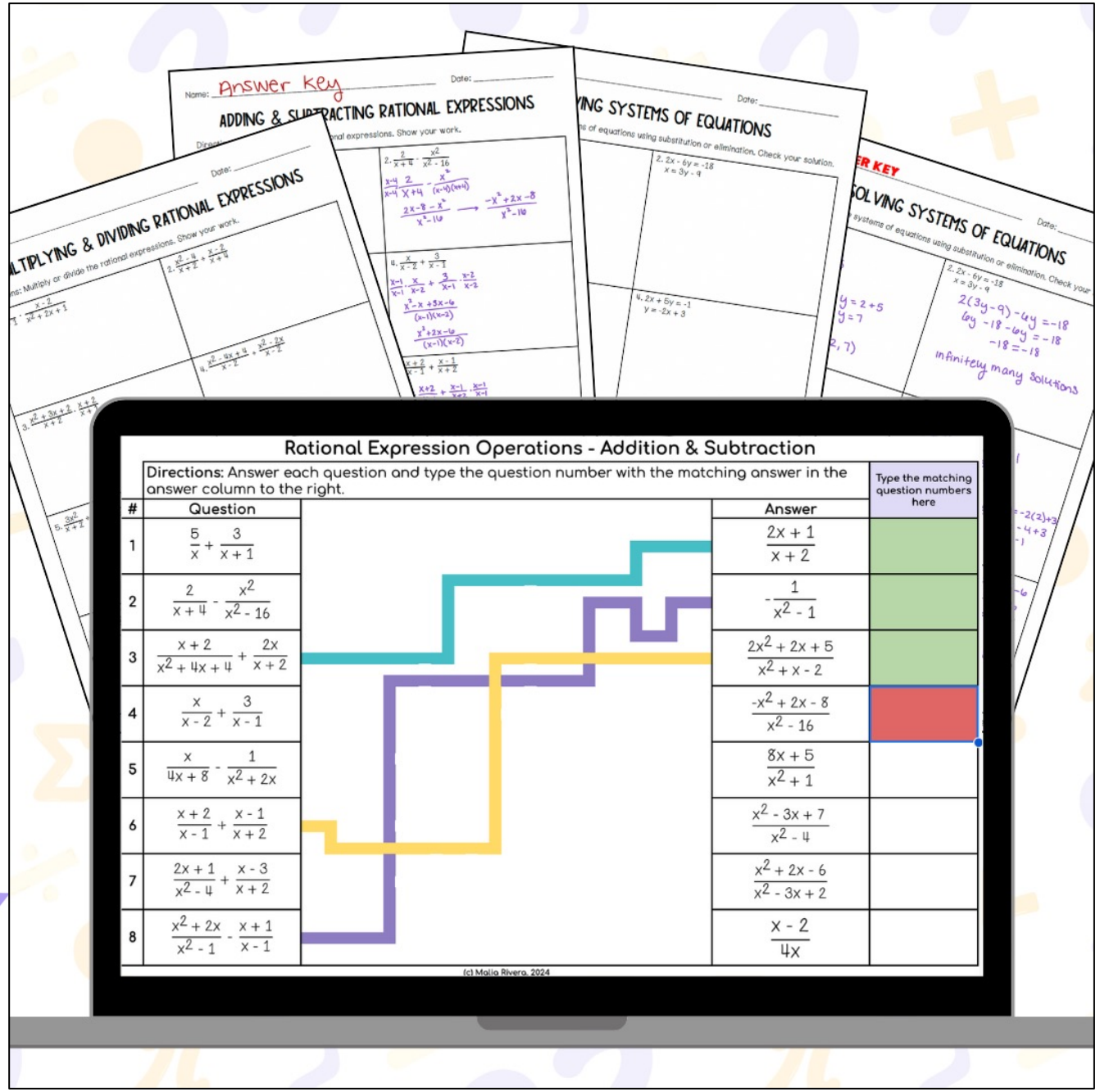

hey there!

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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