

keep scrolling to get a sneak peek!

Help your Algebra 2 students review **various quadratic function skills** with these Thanksgiving review stations! Students will be eager to get the self-checking & student choice benefits from these activities!

QUADRATIC FUNCTIONS REVIEW

Algebra 2 Thanksgiving Stations

Name: _____ Date: _____

GRAPHING QUADRATICS MYSTERY WORD

Directions: Graph each given function in slope intercept form. Write the letter that your graph passes through in the corresponding question number at the bottom to reveal a mystery word.

- $y = 2(x + 4)^2 - 3$
- $y = (x - 4)(x + 2)$
- $y = x^2 - 4x + 3$

IDENTIFYING TRANSFORMATIONS OF QUADRATIC FUNCTIONS

Directions: Match the information on the right side to the correct quadratic transformations by drawing a line from the left to the right. Write down the letter that your line crosses through in the corresponding space at the bottom of the page to reveal a mystery word.

- $y = (x - 4)^2 + 2$
- $y = -2(x + 1)^2 - 3$
- $y = 1/2(x - 3)^2 - 4$
- $y = (-x + 5)^2$

ANSWER KEY

- Reflection over the x-axis, vertical stretch by 2, translated left 1 unit and down 3 units.
- Horizontal compression 1/3, vertical stretch by 9, translated right 1 unit.
- Reflection over the x-axis, vertical compression by 1/2 and translated right 3 units and up 4 units.
- Reflection over the y-axis and a horizontal translation right 5 units.
- Horizontal translation right 4 units, vertical translation up 2 units.
- Reflection over the y-axis, vertical stretch by 2 and translated left 3 units and down 5 units.
- Vertical compression by 1/2 and translated right 3 units and down 4 units.
- Reflection over the x-axis, vertical compression by 1/3, translated right 1 unit and down 4 units.

D Write the equation in vertex form of a parabola that has a vertex of (2, 4) and passes through (4, 20)

A Write the equation in intercept form of a parabola that has intercepts at (-2, 0) and (5, 0)

E Write the equation in standard form of a parabola that passes through the points (1, 0) and (5, 20)



6 Stations activities + Answer keys

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Why do you need this?

Quadratic Functions Review Stations



There are a variety of activities that cover several topics.



Help your students practice these essential math skills.



The activities have self-checking components so students can receive feedback!

SOLVING QUADRATIC EQUATIONS PUZZLE RECORDING

1. $x^2 + 4x + 8 = 0$
 $x = \frac{-4 \pm \sqrt{4^2 - 4(1)(8)}}{2}$
 $x = \frac{-4 \pm \sqrt{16 - 32}}{2}$
 $x = \frac{-4 \pm \sqrt{-16}}{2}$
 $x = \frac{-4 \pm 4i}{2}$
 $x = -2 \pm 2i$

2. $x^2 + 2x - 15 = 0$
 $(x+5)(x-3) = 0$
 $x+5=0$
 $x-3=0$
 $x=-5$
 $x=3$

3. $2x^2 - 12x + 18 = 0$
 $2x^2 - 12x + 18 = 0$
 $2(x^2 - 6x + 9) = 0$
 $2(x-3)^2 = 0$
 $x-3=0$
 $x+3+3$
 $x=3$

4. $2x^2$
 $2x(x)$
 $2x^2$

5. $4. y = -1/2(x-3)(x+1)$
 $5. y = -1/4$

GRAPHING QUADRATICS MYSTERY WORD

Directions: Graph each given function in slope intercept form. Write the letter that your graph crosses through in the corresponding question number on the bottom to reveal a mystery word.

1. $y = 2(x+4)^2 - 3$
2. $y = (x-4)(x+3)$

OPERATIONS OF COMPLEX NUMBERS MAZE

Directions: Answer the question in the box that says "start". The answer will lead you to the next question. Keep answering the questions until you reach the "finish" box. If you don't see your answer, try again!

Start: $(3+4i) + (5-2i)$

Operations: $8+2i$, $(2+3i)(4-i)$, $11+10i$, $\frac{4+i}{1-2i}$, $\frac{5-3i}{2+i}$, $5-8i$, $(7-3i) - (2+5i)$, $11+10i$, $(3-2i)(4+i)$, $\frac{5}{1+i}$, $5-11i$, $10+8i$, $10+8i$, $14-5i$, $10-5i$, $\frac{5}{1+i}$, $10+8i$, $10-5i$, $10-5i$, $10-5i$

Quadratic Functions Thanksgiving Review Stations *includes:*

The image displays three overlapping worksheets for quadratic functions. The top-left worksheet, titled "FINDING THE NUMBER OF QUADRATIC SOLUTIONS PIXEL ART", includes an "ANSWER KEY" section with handwritten solutions for three quadratic equations: A. $x^2 + 4x + 3 = 0$ (solutions: $(-1, 3)$, $(-3, 1)$), B. $x^2 + 6x + 9 = 0$ (solution: $(-3, 0)$), and C. $5x^2 + 2x + 5 = 0$ (no real solutions). The middle worksheet, "OPERATIONS OF COMPLEX NUMBERS MAZE", features a maze with complex number operations like $(3+4i) + (5-2i)$ and $(2+3i)(4-i)$. The bottom-right worksheet, "GRAPHING QUADRATICS MYSTERY WORD", contains six quadratic functions to be graphed in slope-intercept form, with the letters of the words "THANKSGIVING" hidden in the grid intersections. The functions are: 1. $y = 2(x+4)^2 - 3$, 2. $y = (x-4)(x+2)$, 3. $y = x^2 - 4x + 3$, 4. $y = -1/2(x-3)(x+1)$, 5. $y = -1/4(x+2)^2 + 4$, and 6. $y = -x^2 - 2x + 3$. A "Thanksgiving" word search is also present at the bottom of this worksheet.

- ✓ 6 printable station activities
- ✓ detailed answer keys
- ✓ color & printer-friendly versions

station 1 - Matching Mystery Word

Skill: Identifying Transformations of Quadratic Equations

Students will match the quadratic equation on the right with the corresponding transformations on the left. The connection line will cross through a letter that will be recorded at the bottom of the page to reveal a mystery word.

Includes:

- 8 questions
- Answer key

Name: **ANSWER KEY** Date: _____

IDENTIFYING TRANSFORMATIONS OF QUADRATIC FUNCTIONS

Directions: Match the information on the right side to the correct quadratic transformations by drawing a line from one to the other. Write down the letter that your line crosses through in the corresponding space at the bottom of the page to reveal a mystery word.

1 $y = (x - 4)^2 + 2$ **B**

2 $y = -2(x + 1)^2 - 3$ **E**

3 $y = 1/2(x - 3)^2 - 4$ **R**

4 $y = (-x + 5)^2$ **H**

5 $y = -1/3(x + 2)^2 + 1$ **C**

6 $y = (3x - 3)^2$ **S**

7 $y = -(x + 4)^2 + 6$ **U**

8 $y = 2(-x - 3)^2 - 5$ **W**

Reflection over the x-axis, vertical stretch by 2, translated left 1 unit and down 3 units.

Reflection over the x-axis, vertical stretch by 2, translated left 1 unit and down 3 units.

Horizontal compression by 1/3, vertical stretch by 9 and translated right 1 unit.

Reflection over the x-axis, vertical compression by 1/2, and translated right 3 units and up 4 units.

Reflection over the y-axis and a horizontal translation right 5 units.

Horizontal translation right 4 units, vertical translation up 2 units.

Reflection over the y-axis, vertical stretch by 2 and translated left 3 units and down 5 units.

Vertical compression by 1/2 and translated right 3 units and down 4 units.

Reflection over the x-axis, vertical compression by 1/3, and translated left 2 units and up 1 unit.

Horizontally translated 4 units right and vertically translated down 2 units.

Reflection over the x-axis, horizontally translated left 4 units, and vertically translated up 6 units.

During the Thanksgiving season, we often reflect on things we are _____ for.

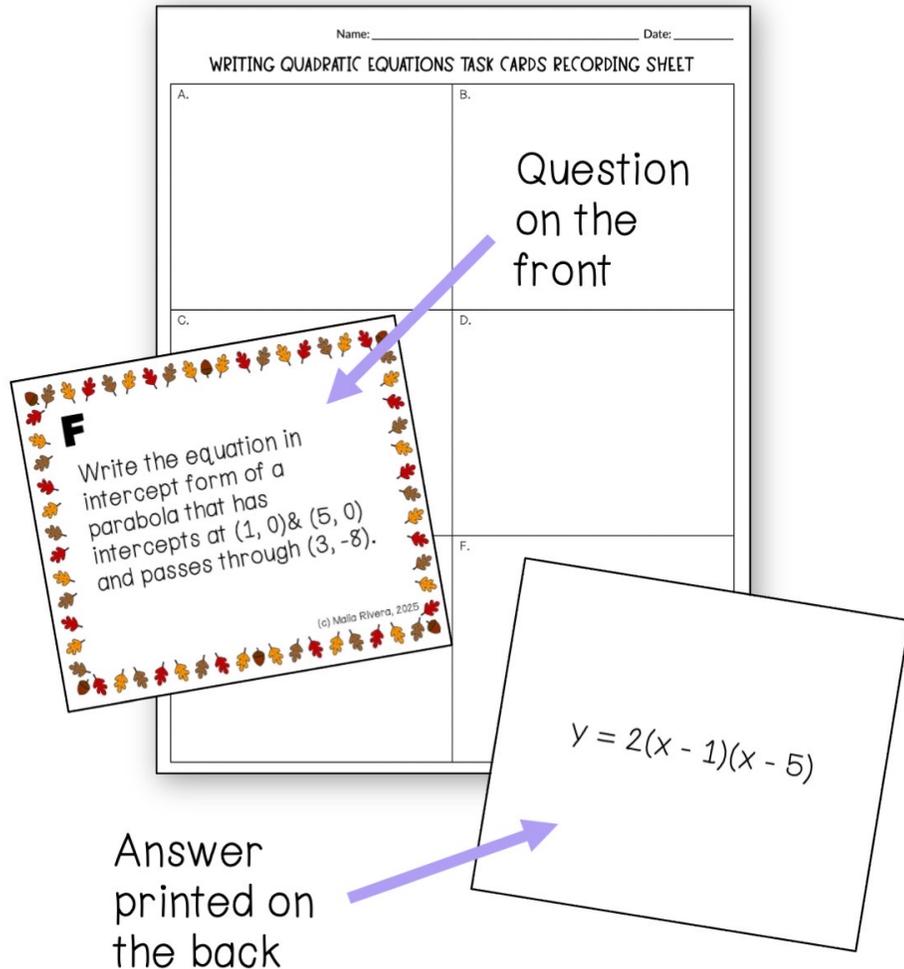
G **R** **A** **T**

4 1 8 6

4 1 8 6 2 3 5 7

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station 2 - Self-Checking Task Cards



Skill: Writing Quadratic Equations

(In vertex, intercept, and standard forms)

Students will answer the question on the front by showing their work on the provided recording sheet. To make it self-checking, print the answers on the back of the cards.

Includes:

- 6 questions
- Recording sheet
- Answers printed on the back (optional)
- Detailed answer key

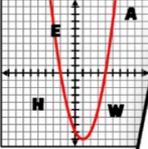
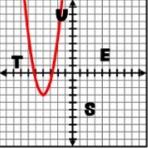
station 3 - Mystery Word Graphing

Name: _____ Date: _____

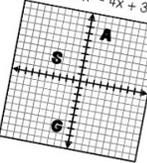
GRAPHING QUADRATICS MYSTERY WORD

Directions: Graph each given function in slope intercept form. Write the letter that your graph crosses through in the corresponding question number at the bottom of the worksheet to reveal a mystery Thanksgiving word.

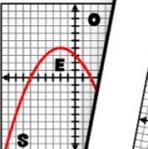
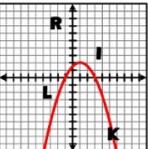
1. $y = 2(x + 4)^2 - 3$ 2. $y = (x - 4)(x + 2)$



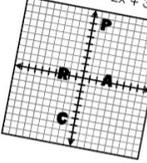
3. $y = x^2 - 4x + 3$



4. $y = -1/2(x - 3)(x + 1)$ 5. $y = -1/4(x + 2)^2 + 4$



6. $y = -x^2 - 2x + 3$



Most people think of this

T	U	R
5	1	6

Most people think of this when they think of "Thanksgiving".

5	1	6	4	2	3
---	---	---	---	---	---

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Skill: Graphing Quadratic Equations (In vertex, intercept, and standard forms)

Given the the quadratic equation in either vertex, intercept, or standard form students will graph the curve on the coordinate plane. Their parabola will go through a letter that they will record at the bottom of the worksheet to reveal a mystery Thanksgiving word.

Includes:

- 6 questions
- Answer key

station 4 - Self-Checking Puzzle

Name: **ANSWER KEY** Date: _____

SOLVING QUADRATIC EQUATIONS PUZZLE RECORDING SHEET

1. $x^2 + 4x + 8 = 0$ $x = \frac{-4 \pm \sqrt{4^2 - 4(1)(8)}}{2}$ $x = \frac{-4 \pm \sqrt{16 - 32}}{2}$ $x = \frac{-4 \pm \sqrt{-16}}{2}$ $x = \frac{-4 \pm 4i}{2}$ $x = -2 \pm 2i$	2. $x^2 + 2x - 15 = 0$ $(x+5)(x-3) = 0$ $x+5=0$ $x-3=0$ $-5-5$ $+3+3$ $x=-5$ $x=3$
3. $2x^2 - 12x = -18$ $+18$ $+18$ $2x^2 - 12x + 18 = 0$ $2(x^2 - 6x + 9) = 0$ $2(x-3)^2 = 0$ $x-3=0$ $+3+3$ $x=3$	4. $2x^2 - 8x = 0$ $2x(x-4) = 0$ $x=0$ $x-4=0$ $+4+4$ $x=4$
5. $x^2 + 10 = 0$ -10 -10 $\sqrt{x^2} = \sqrt{-10}$ $x = \pm \sqrt{-10}$	

Handwritten puzzle pieces:

- $x = -3$ (leaf icon)
- $x = 1, 4$ (apple icon)
- $x = 2, 5$ (leaf icon)
- $x = -7, 1$ (leaf icon)
- $x = 2 \pm 2i$ (apple icon)
- $x = 0, 4$ (apple icon)
- $x = -3, 5$ (apple icon)

Skill: Solving Quadratic Equations (by factoring, quadratic formula, and square roots)

Students will answer questions on the individual puzzle pieces and match the question side with the answer of another piece. Once they match all the pieces, the puzzle is solved. *Not all questions and answers will be used.

Includes:

- 12 questions
- Answer key

station 5 - Self-Checking Pixel Art

Name: **ANSWER KEY** Date: _____

FINDING THE NUMBER OF QUADRATIC SOLUTIONS PIXEL ART

Directions: Determine the number of solutions each quadratic function has. Find your answer from the choices below the problem. Then color in the grid based on your answers.

A. $x^2 + 4x + 3 = 0$ $(4)^2 - 4(1)(3)$ $16 - 12$ $4 > 0$ Two real solutions	B. $x^2 + 6x + 9 = 0$ $(6)^2 - 4(1)(9)$ $36 - 36$ $0 = 0$ one real solution	C. $5x^2 + 2x + 5 = 0$					
One Real Solution Orange	Two Real Solutions Red	No Real Solution Blue	Two Real Solutions Light Pink	No Real Solution Purple	One Real Solution Brown		
D. $2x^2 - 3x - 5 = 0$ $(-3)^2 - 4(2)(-5)$ $9 + 40$ $49 > 0$ Two real solutions	E. $x^2 - 8x + 16 = 0$ $(-8)^2 - 4(1)(16)$ $64 - 64$ $0 = 0$ one real solution						
One Real Solution Yellow	Two Real Solutions Tan	No Real Solution Blue	One Real Solution Yellow	Two Real Solutions Light Blue	No Real Solution Black	Two Real Solutions Dark green	One Real Solution Red

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Skill: Applying the Discriminant

Students will use the discriminant to determine the number of solutions each quadratic function has. Their answers will determine how to color the grid at the bottom to reveal a Thanksgiving pixel picture.

Includes:

- 6 questions
- Detailed answer key

station 6 - Maze

Name: **ANSWER KEY** Date: _____

OPERATIONS OF COMPLEX NUMBERS MAZE

Directions: Answer the question in the box that says "start". The answer will lead you to the next question. Keep answering the questions until you reach the "finish" box. If you don't see your answer, try again!

Start
 $(3+4i) + (5-2i)$

$8+2i$

$(2+3i)(4-i)$

$11+10i$

$8+6i$

$5+2i$

$8+10i$

$5-8i$

$(7-3i) - (2+5i)$

$5-11i$

5

$5+11i$

5

$-13+13i$

$-6-11i$

$(-2-8i) - (4+3i)$

$-6-11i$

$(1-5i)(-2+3i)$

$13+13i$

FINISHED!

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Skill: Operations of Complex Numbers

(Add, subtract, multiply, and divide)

Students will solve each complex operation question. Their answer choice will determine their path until they reach the finish box.

Includes:

- 6 questions
- Answer key

how to use this resource

This is a great activity to use when reviewing for an end of unit assessment on **quadratic functions** or as an end of year review.

These stations are also a **substitute-friendly** assignment!

Name: _____ Date: _____

FINDING THE NUMBER OF QUADRATIC SOLUTIONS PIXEL ART

Directions: Rewrite each of the given equations into function form, aka slope intercept form, your answer from the choices below the problem. Then color in the grid based on your answer.

A. $x^2 + 4x + 3 = 0$
 B. $x^2 + 6x + 9 = 0$
 C. $5x^2 + 2x + 5 = 0$

No Real Solution
 One Real Solution
 No Real Solution
 Black

One Real Solution
 Orange
 D. $2x^2$

Name: _____ Date: _____

IDENTIFYING TRANSFORMATIONS OF QUADRATIC FUNCTIONS

Directions: Match the information on the right side to the correct quadratic transformations by drawing a line from one to the other. Write down the letter that your line crosses through in the corresponding space at the bottom of the page to reveal a mystery word.

1	$y = (x - 4)^2 + 2$	•	B	
2	$y = -2(x + 1)^2 - 3$	•		E
3	$y = 1/2(x - 3)^2 - 4$	•	H	R
4	$y = (-x + 5)^2$	•		G
5	$y = -1/3(x + 2)^2 + 1$	•	U	W
				F

Reflection over the x-axis, vertical stretch by 2, translated left 1 unit and down 3 units.
 Horizontal compression by 1/3, vertical stretch by 9 and translated right 1 unit.
 Reflection over the x-axis, vertical compression by 1/2, and translated right 3 units and up 4 units.
 Reflection over the y-axis and a horizontal translation right 5 units.
 Horizontal translation right 4 units, vertical translation up 2 units.
 Reflection over the y-axis, vertical stretch by 2 and translated left 3 units and down 5 units.

You may also enjoy...

QUADRATIC FUNCTIONS REVIEW

March Math-ness Stations

STATION 2: DRIBBLE, DRIBBLE, SHOOT!
Directions: Start with any question you'd like and answer it. Once you find the answer, then go to the letter in the long box below.

STATION 3: FULL COURT GRAPH
Directions: Graph each given function. Record the letter of the basketball that passes through.

1. $y = x^2 - 5x + 3$ (A)
2. $y = 2(x - 1)^2 - 4$ (C)
4. $y = -x^2 - 6x - 8$ (N)

What is the vertex of $y = x^2 - 14x + 3$?
What is the axis of symmetry of $y = 2x^2 - 12x - 13$?
What way does the graph open for $y = -3x^2 + 27x + 7$?
What is the vertex of $y = x^2 - 20x + 7$?
What is the vertex of $y = x^2 - 20x + 7$?
What is the y-intercept of $y = 3x^2 + 20x - 7$?
What is the y-intercept of $y = 3x^2 + 20x - 7$?

up
o
s
c
p
7
8
2
4

4 Stations activities + Answer keys
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SOLVING QUADRATIC EQUATIONS CHOICE BOARD

Digital & Printable

Solving Quadratic Equations Choice Board

Directions: Choose **ONE** problem from each column. Show your work in the box provided. If possible, give your answer in exact and approximate forms.

Solve by Factoring	Solve by Square Roots	Solve by Quadratic Formula
1. $16 + 10x = 5x^2$	2. $25x^2 = 16$	3. $-x^2 = -8x - 11$
4. $-8x^2 = 2x^3 - 24x$	5. $5x^2 + 12 = -8$	6. $2x^2 = 7 - 12x$
7. $8x^2 = 65x + 72$	8. $21 = 3(x + 4)^2$	9. $8x^2 + 8 = 6 - 9x$

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WRITING QUADRATICS IN INTERCEPT FORM

Differentiated Circuit Worksheet

WRITING QUADRATIC EQUATIONS IN INTERCEPT FORM

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

1. $1 \rightarrow \rightarrow \rightarrow \rightarrow \rightarrow \rightarrow \rightarrow \rightarrow \rightarrow$

Previous Answer: $y = 2(x - 2)(x - 5)$ # 1

2. Write a quadratic equation in intercept form that goes through the intercepts at (1, 0) and (-2, 0).

Previous Answer: $y = -x(x + 4)$ # 7

3. Write a quadratic equation in intercept form that goes through the point (0, -4) and has intercepts at (2, 0) and (-2, 0).

Previous Answer: $y = 1/3(x + 2)(x - 3)$ # 3

4. Write a quadratic equation in intercept form that goes through the point (3, 12) and has intercepts at (1, 0) and (-2, 0).

Previous Answer: $y = a(x - 2)(x + 2)$ # 7

5. Write a quadratic equation in intercept form that goes through the point (0, -4) and has intercepts at (2, 0) and (-2, 0).

Previous Answer: $y = a(x - 2)(x + 2)$ # 7

6. Write a quadratic equation in intercept form that goes through the point (0, -4) and has intercepts at (2, 0) and (-2, 0).

Previous Answer: $y = a(x - 2)(x + 2)$ # 7

7. Write a quadratic equation in intercept form that goes through the point (-2, 4) and has intercepts at (0, 0) and (-4, 0).

Previous Answer: $y = a(x - 2)(x + 2)$ # 7

8. Write a quadratic equation in intercept form that goes through the intercepts at (2, 0) and (-2, 0).

Previous Answer: $y = a(x - 2)(x + 2)$ # 7

9. Write a quadratic equation in intercept form that goes through the point (0, -4) and has intercepts at (2, 0) and (-2, 0).

Previous Answer: $y = a(x - 2)(x + 2)$ # 7

10. Write a quadratic equation in intercept form that goes through the point (0, -4) and has intercepts at (-3, 0) and (1, 0).

Previous Answer: $y = a(x - 2)(x + 2)$ # 7

Handwritten solutions shown in red:

- $4 = a(-2-0)(-2+4)$
 $4 = a(-2)(2)$
 $4 = -4a$
 $a = -1$
 $y = -x(x+4)$
- $4 = a(2-0)(0+2)$
 $4 = a(2)(2)$
 $4 = 4a$
 $a = 1$
 $y = x(x+4)$
- $4 = a(-2)(2)$
 $4 = -4a$
 $a = -1$
 $y = -x(x+2)$
- $4 = a(2)(2)$
 $4 = 4a$
 $a = 1$
 $y = x(x+2)$

2 versions + Answer key included
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check it out!

Answer Key
Name: _____ Date: _____
ADDING & SUBTRACTING RATIONAL EXPRESSIONS
Directions: Simplify each rational expression. Show your work.

Solving Systems of Equations
Date: _____
Solve each system of equations using substitution or elimination. Check your solution.
 $2x - 6y = -18$
 $x = 3y - 9$
 $2(3y - 9) - 6y = -18$
 $6y - 18 - 6y = -18$
 $-18 = -18$
infinitely many solutions

Answer Key
Name: _____ Date: _____
SOLVING SYSTEMS OF EQUATIONS
Solve each system of equations using substitution or elimination. Check your solution.
 $2x - 6y = -18$
 $x = 3y - 9$
 $2(3y - 9) - 6y = -18$
 $6y - 18 - 6y = -18$
 $-18 = -18$
infinitely many solutions

Multiplying & Dividing Rational Expressions
Date: _____
Directions: Multiply or divide the rational expressions. Show your work.

Rational Expression Operations - Addition & Subtraction
Directions: Answer each question and type the question number with the matching answer in the answer column to the right.

#	Question	Answer	Type the matching question numbers here
1	$\frac{5}{x} + \frac{3}{x+1}$	$\frac{2x+1}{x+2}$	
2	$\frac{2}{x+4} - \frac{x^2}{x^2-16}$	$-\frac{1}{x^2-1}$	
3	$\frac{x+2}{x^2+4x+4} + \frac{2x}{x+2}$	$\frac{2x^2+2x+5}{x^2+x-2}$	
4	$\frac{x}{x-2} + \frac{3}{x-1}$	$\frac{-x^2+2x-8}{x^2-16}$	
5	$\frac{x}{4x+8} - \frac{1}{x^2+2x}$	$\frac{8x+5}{x^2+1}$	
6	$\frac{x+2}{x-1} + \frac{x-1}{x+2}$	$\frac{x^2-3x+7}{x^2-4}$	
7	$\frac{2x+1}{x^2-4} + \frac{x-3}{x+2}$	$\frac{x^2+2x-6}{x^2-3x+2}$	
8	$\frac{x^2+2x}{x^2-1} - \frac{x+1}{x-1}$	$\frac{x-2}{4x}$	

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hey there!

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