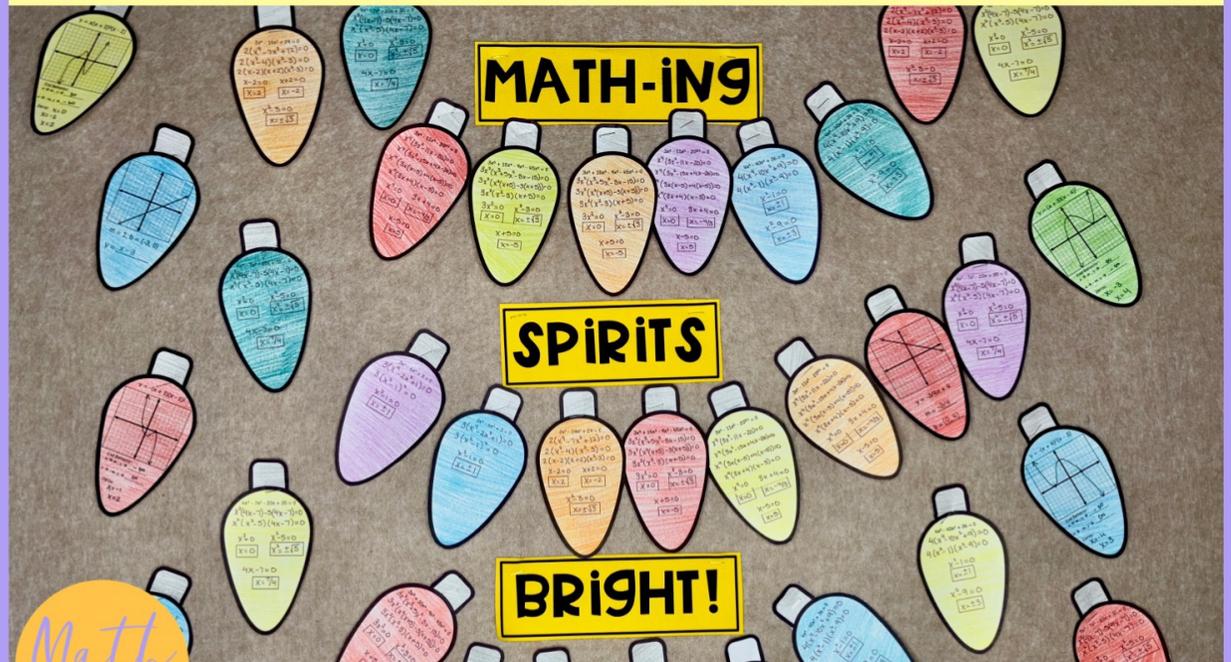


keep scrolling to
get a sneak peek!

If you're looking for a new way to get your students practicing math, this is the resource for you! With this **solving polynomial equations** collaborative activity, students will solve higher order polynomial equations on the light bulb pieces. Assembling all the students' pieces creates one large holiday display on your classroom bulletin board.

SOLVING POLYNOMIAL EQUATIONS

Holiday Lights



student work bulletin board

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Why do you need this?

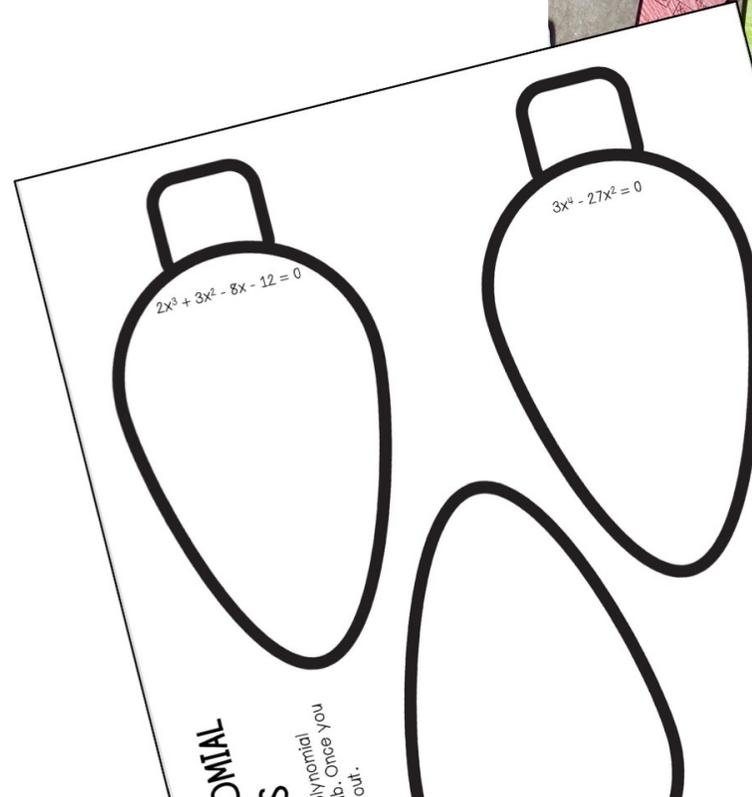
Solving Polynomial Equations Holiday Lights Bulletin Board



New & engaging way to help students practice solving polynomial equations



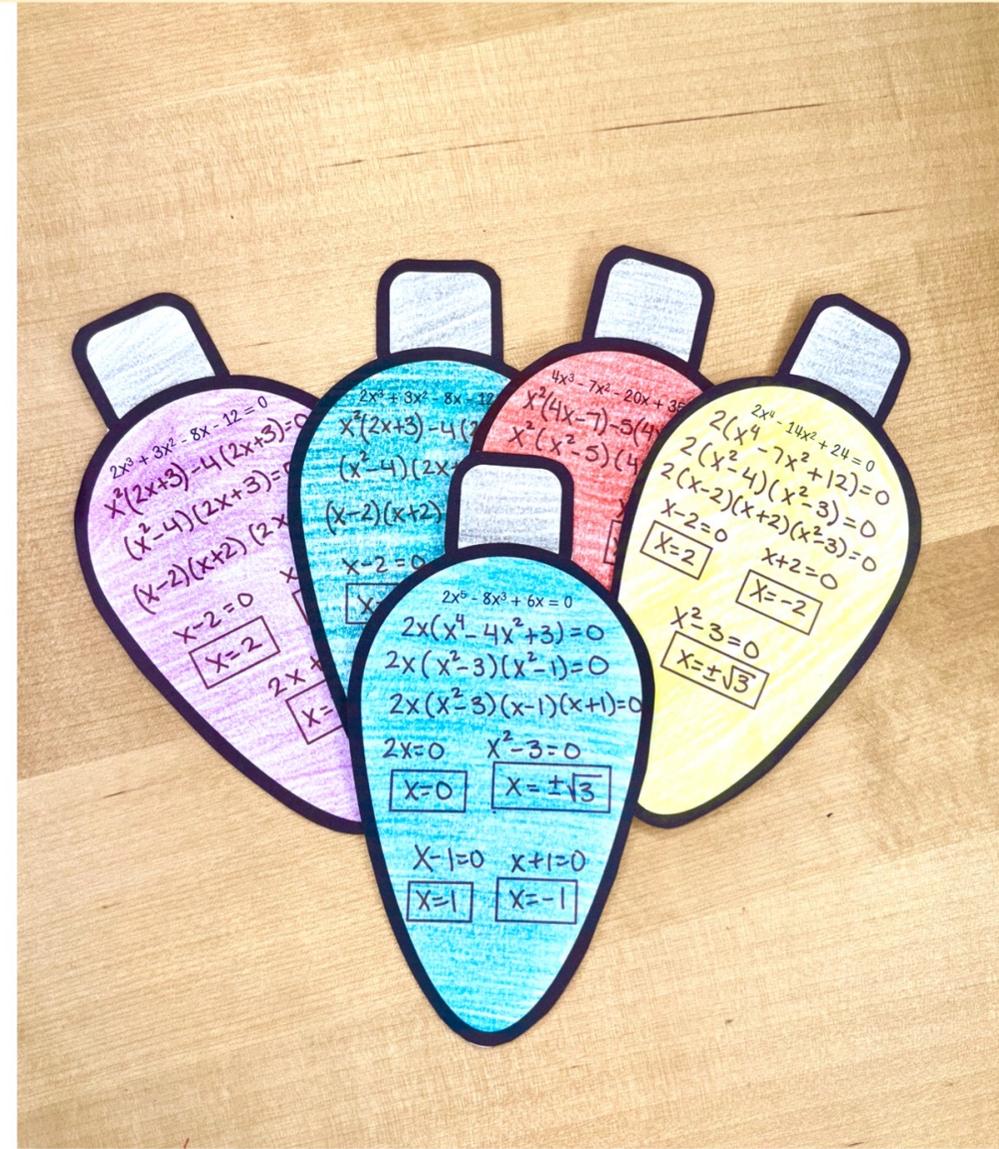
Unique, collaborative way to display student work



Solving Polynomial Equations Holiday Bulletin Board

skills included:

- Solving polynomials of degree 3, 4, 5, 6
- Factoring by grouping
- Factoring special products



how to use this resource



- Print or make copies – I print on white so my students color it how they want.
- Students will answer the questions on each holiday light.
- Collect all the students' pieces & put it up on the bulletin board to create one big, festive holiday lights design

You may also enjoy ...

CHARACTERISTICS OF POLYNOMIALS

collaborative tessellation

CHARACTERISTICS OF POLYNOMIAL FUNCTIONS

at the given graph, identify the maximum & minimum values, the zeros, and the intervals of increasing & decreasing intervals, domain & range, the degree, and the leading coefficient. Once you are finished, cut out your tessellation piece.

What is the end behavior?

What are the zeros & their multiplicities?

End Behavior:

As $x \rightarrow \infty$, $y \rightarrow$ _____

As $x \rightarrow -\infty$, $y \rightarrow$ _____

As $x \rightarrow \infty$, $y \rightarrow$ _____

As $x \rightarrow -\infty$, $y \rightarrow$ _____

What are the zeros & their multiplicities?



Christmas tree bulletin board

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SOLVING POLYNOMIAL EQUATIONS

Algebra 2 Guided Notes

SOLVING POLYNOMIAL EQUATIONS

nomial equation by factoring.

$$0 = 2x^3 - 12x^2 + 18x$$

$12n^2 + 48n = -n^3 - 64$

The Rational Root Theorem

If a polynomial function has a rational solution of $f(x) = 0$ has the form $\frac{p}{q}$, then p is a factor of the constant term and q is a factor of the leading coefficient.

The rational root theorem helps to find all of the rational solutions, you must check all the values from the list of possible solutions.

Ex: Find the real solutions of $x^3 - 8x^2 + 11x + 20 = 0$.

$x = 5, 9$ Purple	$x = -3, 3, 5$ Pink	$x = -9, 5$ Green	$x = 0, 4$ Black
$x = -32$			$4, 4x^4 - 40x^2 + 64$



Answer key included

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SOLVING POLYNOMIAL EQUATIONS

Color by Number Worksheet

SOLVING POLYNOMIAL EQUATIONS COLOR BY NUMBER

Directions: Solve each polynomial equation. Circle the answer from the list. The correct answers will determine how you color the grid page.

1. $5x^2 - 9x + 45 = 0$

2. $x^3 - 4x^2 + 4x = 0$

$x = 5, 9$ Purple	$x = -3, 3, 5$ Pink	$x = -9, 5$ Green	$x = 0, 4$ Black
$x = -32$			$4, 4x^4 - 40x^2 + 64$



Answer key included

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check it out!

Answer Key
Name: _____ Date: _____
ADDING & SUBTRACTING RATIONAL EXPRESSIONS
Directions: Add or subtract the rational expressions. Show your work.

Solving Systems of Equations
Date: _____
Solve systems of equations using substitution or elimination. Check your solution.
2. $2x - 6y = -18$
 $x = 3y - 9$
4. $2x + 6y = -1$
 $y = -2x + 3$

Answer Key
Solving Systems of Equations
Date: _____
Solve systems of equations using substitution or elimination. Check your solution.
2. $2x - 6y = -18$
 $x = 3y - 9$
 $2(3y - 9) - 6y = -18$
 $6y - 18 - 6y = -18$
 $-18 = -18$
infinitely many solutions
 $y = 2 + 5$
 $y = 7$
 $(2, 7)$

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!

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 these too!

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