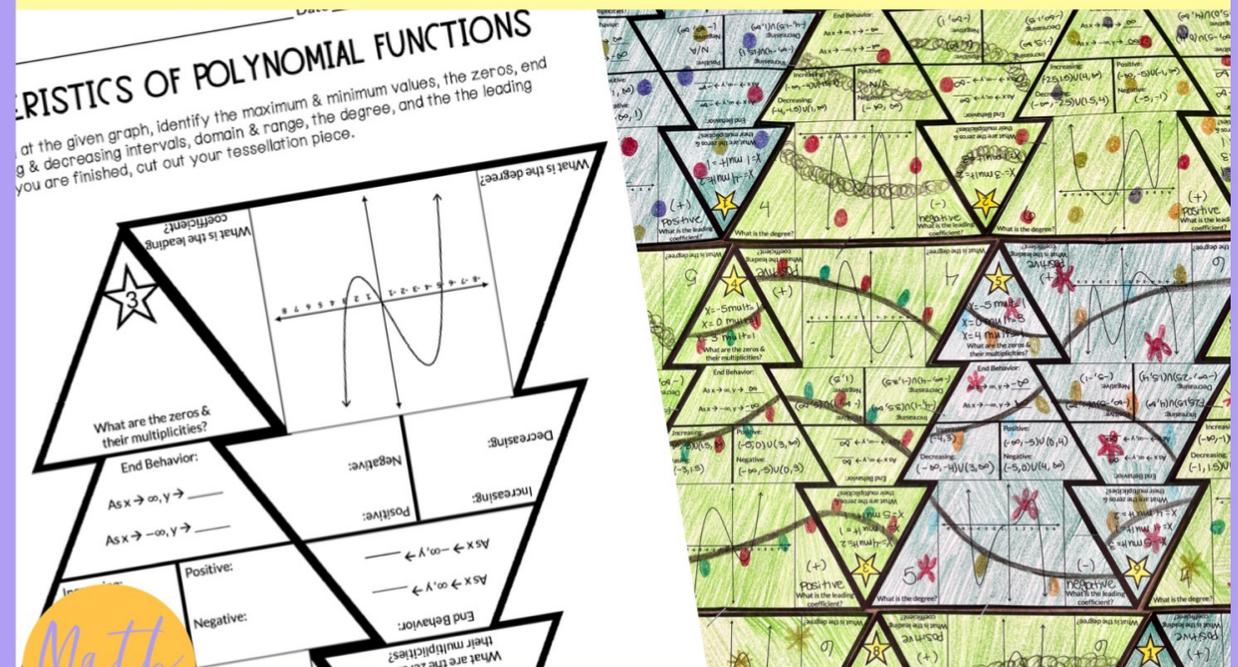


keep scrolling to
get a sneak peek!

If you're looking for a new way to get your students practicing math, this is the resource for you! With this **characteristics of polynomials** collaborative activity, students will identify various characteristics from the polynomial graph on tessellation piece. Assembling all the students' pieces creates one large holiday tessellation to display on your classroom bulletin board.

CHARACTERISTICS OF POLYNOMIALS

collaborative Tessellation



Christmas Tree bulletin board

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Why do you need this?

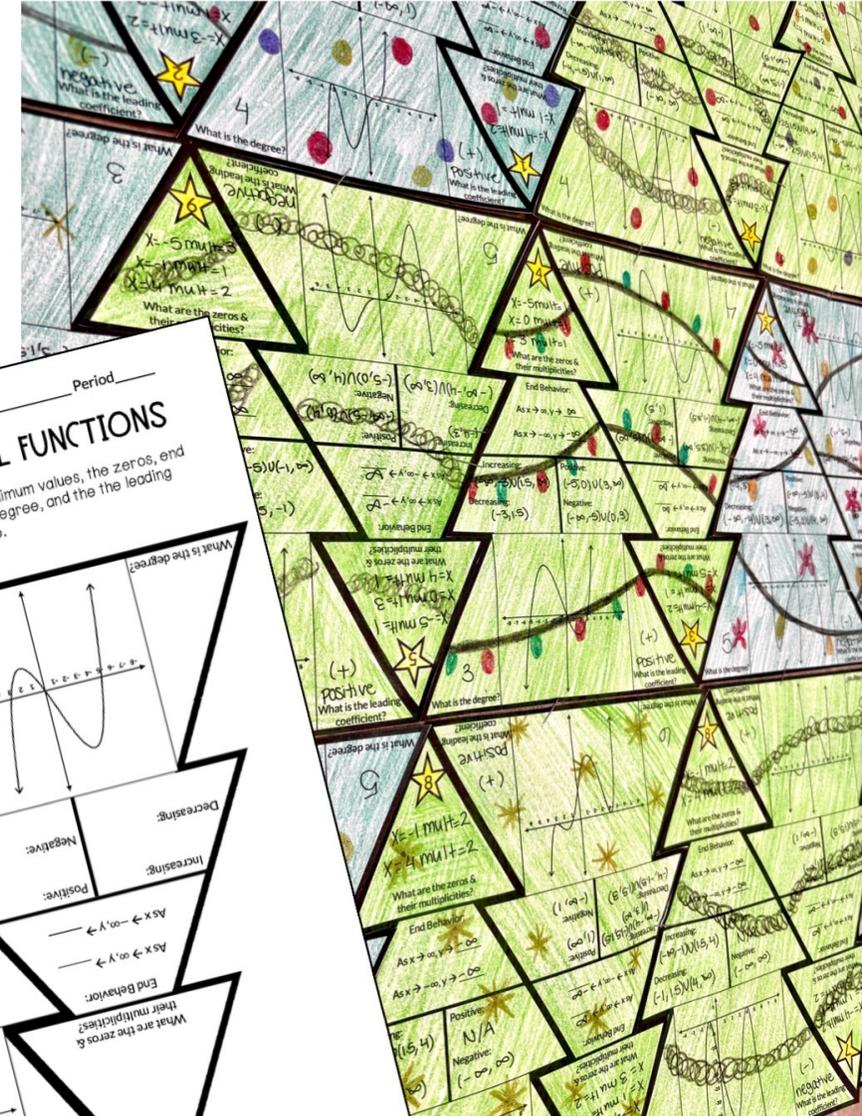
Characteristics of Polynomials Collaborative Tesselation



New & engaging way to help students practice identifying characteristics of polynomials



Unique, collaborative way to display student work



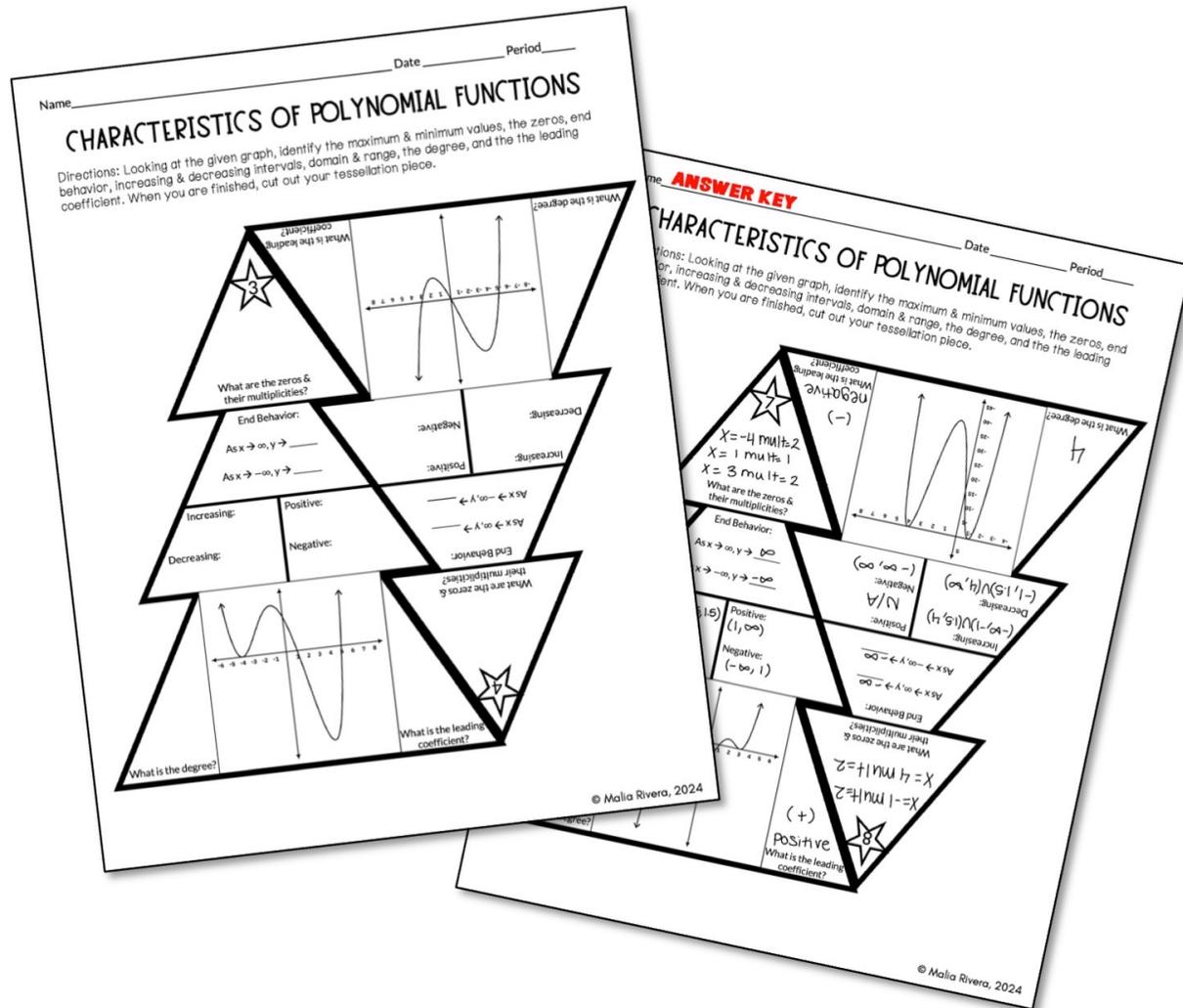
Name _____ Date _____ Period _____

CHARACTERISTICS OF POLYNOMIAL FUNCTIONS

Directions: Looking at the given graph, identify the maximum & minimum values, the zeros, the degree, and the leading coefficient. When you are finished, cut out your tessellation piece.

What are the zeros & their multiplicities?		What is the degree?
End Behavior:		What is the leading coefficient?
As $x \rightarrow \infty, y \rightarrow$ _____		
As $x \rightarrow -\infty, y \rightarrow$ _____		
Increasing:	Positive:	Decreasing:
As $x \rightarrow \infty, y \rightarrow$ _____	As $x \rightarrow \infty, y \rightarrow$ _____	As $x \rightarrow \infty, y \rightarrow$ _____
As $x \rightarrow -\infty, y \rightarrow$ _____	As $x \rightarrow -\infty, y \rightarrow$ _____	As $x \rightarrow -\infty, y \rightarrow$ _____
Decreasing:	Negative:	End Behavior:
		What are the zeros & their multiplicities?
		Positive:
		Negative:

Characteristics of Polynomials Collaborative Tessellation *includes:*



✔ 4 blank tessellation pages per student

✔ 8 questions total

✔ an answer key

✔ teacher instructions

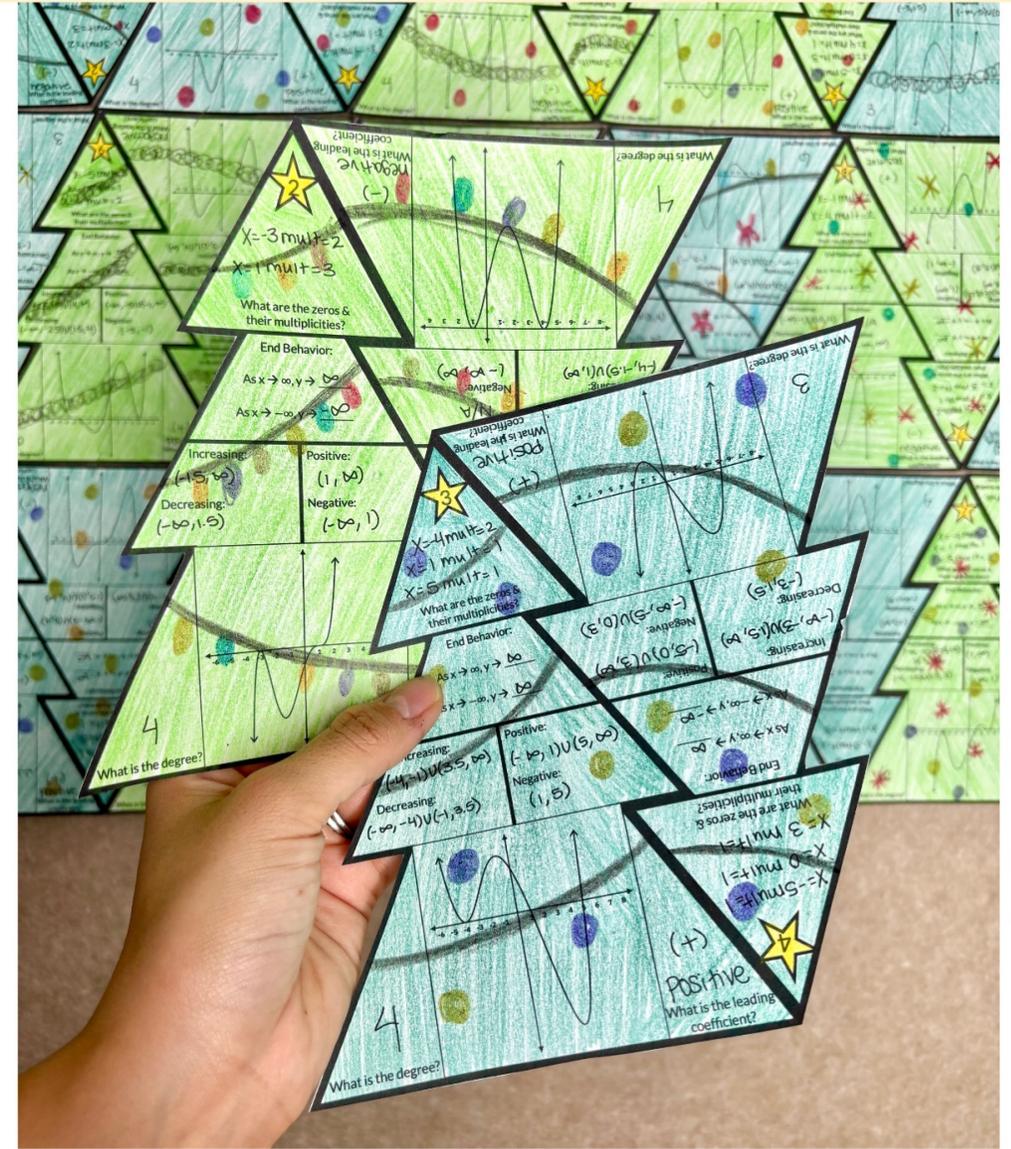
Characteristics of Polynomials Collaborative Tessellation

standards covered:

CCSS: HSA-APR.B.3, HSF-IF.C.7c

TEKs: P.2.I, P.2.J

VA SOLs: F.All.7bcdeh



Characteristics of Polynomials Collaborative Tesselation

polynomial characteristics:

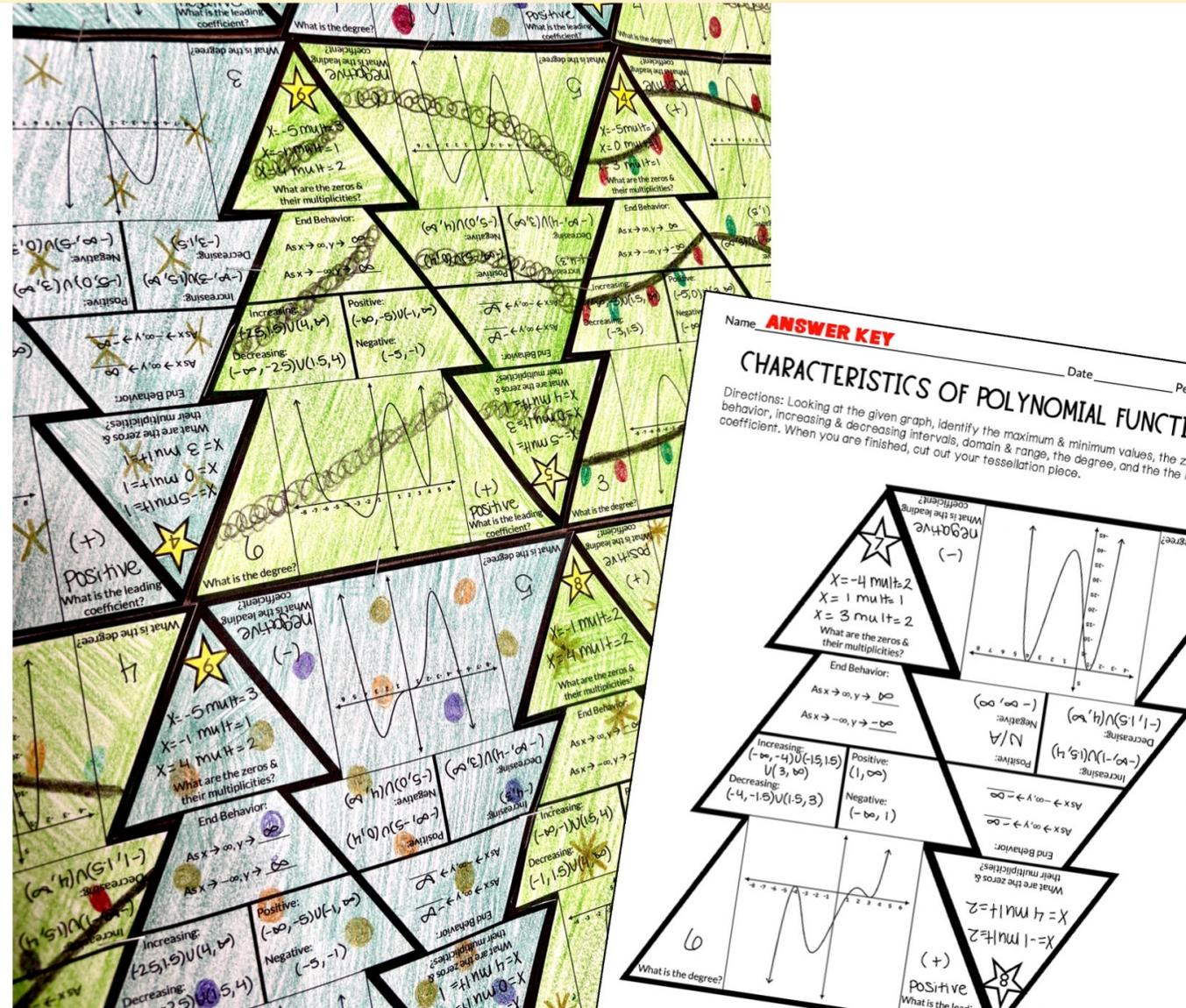
- Zeros & Multiplicities
- End Behavior
- Increasing & Decreasing
- Positive & Negative
- Degree
- Leading Coefficient



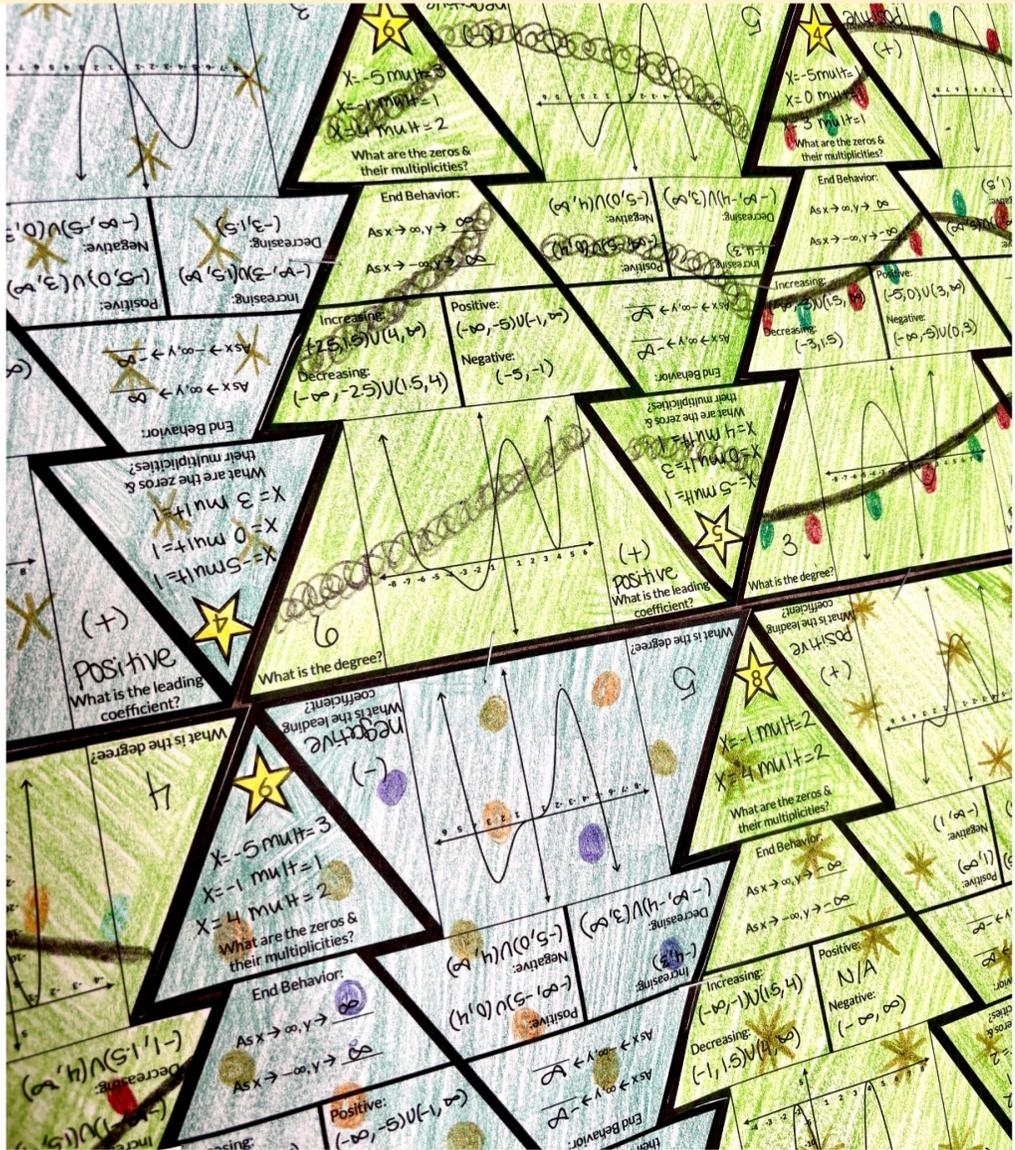
Characteristics of Polynomials Collaborative Tesselation

Once all the student pieces are finished, it will create one large, colorful tessellation bulletin board display.

Students, Teachers, Staff and Parents will love looking at the display of your students' work on your classroom wall!



how to use this resource



- Print or make copies – I print on white so my students can decorate each piece how they want.
- Students will answer the questions on each Christmas tree (2 per page)
- Collect all the students' pieces & put it up on the bulletin board to create one big, festive Christmas tree design

You may also enjoy ...

CHARACTERISTICS OF POLYNOMIAL FUNCTIONS

Algebra 2 Guided Notes

POLYNOMIAL FUNCTION CHARACTERISTICS

Zeros: _____ is a zero of the polynomial function.

Factors: _____ is a factor of the polynomial function.

Solutions: _____ is a solution (or _____) of the polynomial equation.

X-Intercepts: _____

If k is a real number, then k is an _____ of the polynomial function $f(x)$. The _____

Relative Extrema (Minimum or Maximum)

Points on the graph that help to determine the _____ which a function is _____ They are also called _____

Increasing Intervals

The interval between _____ y-value _____

Decreasing Intervals

The interval between _____ y-value _____

Algebraic Definition of Even Functions

Definition of _____ functions

$g(x) = x^4$

$f(x) = x^3 - 7x$

Answer key included

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GRAPHING POLYNOMIAL FUNCTIONS

Algebra 2 Guided Notes

GRAPHING POLYNOMIAL FUNCTIONS

Graph of $f(x) = (x + 3)(x - 2)^2$

Equation is written in **factored form**

GRAPHING POLYNOMIAL FUNCTIONS

Sketch a graph of $f(x)$ that has the following characteristics:

- f has zeros $-2, 3,$ and 5 that do not repeat
- f is increasing when $x < 0$ and $x > 4$
- f is decreasing when $0 < x < 4$

$f(x) > 0$ when _____

$f(x) < 0$ when _____

Answer key included

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POLYNOMIAL FUNCTIONS

Algebra 2 Guided Notes

POLYNOMIAL FUNCTION CHARACTERISTICS

COMPLEX CONJUGATES

Complex Conjugates: If $a + bi$ is a root of the polynomial, then its complex conjugate $a - bi$ is also a root.

Steps for writing polynomial questions with complex roots:

- Step 1: Identify the all real roots.
- Step 2: Write the polynomial function.
- Step 3: Multiply the factors.

Directions: Write a polynomial function $f(x)$ of leading coefficient of 1, and zeros: 2 and $3 + i$.

CLASSIFYING POLYNOMIALS

Polynomial Function	Type of Polynomial
A monomial or the _____	
A polynomial written in the form _____	
The _____ power of the leading coefficient _____	
The _____ of the leading coefficient _____	

Directions: Decide whether each function is a polynomial. Write the degree in standard form and state the degree.

1. $f(x) = -x^3$

Answer key included

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Free Algebra Activities!

When you join my email list, I'll send you a free Algebra print & digital self-checking activities. There is an Algebra 1 and Algebra 2 version!

You'll also be getting exclusive freebies and content to help your Algebra students be successful this school year!

check it out!

The image shows a collage of algebra worksheets and a digital tablet. The worksheets include:

- Answer Key** for **ADDING & SUBTRACTING RATIONAL EXPRESSIONS** and **SOLVING SYSTEMS OF EQUATIONS**.
- MULTIPLYING & DIVIDING RATIONAL EXPRESSIONS** worksheet with problems like $\frac{x-2}{x^2+2x+1}$.
- SOLVING SYSTEMS OF EQUATIONS** worksheet with problems like $2. 2x - 6y = -18$ and $x = 3y - 4$.

The digital tablet displays a self-checking activity titled **Rational Expression Operations - Addition & Subtraction**. The directions are: "Answer each question and type the question number with the matching answer in the answer column to the right." The activity consists of a table with 8 questions and 8 answers, with a path of colored lines connecting the questions to their corresponding answers.

#	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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