

keep scrolling to get a sneak peak!

This set of guided notes will walk Algebra 2 students through transformations of radical functions. All you need to do is print & make copies for your students!

TRANSFORMATIONS OF RADICAL FUNCTIONS

Algebra 2 Guided Notes

TRANSFORMATIONS OF RADICAL FUNCTIONS

Type of Transformation	f(x) Notation	In Words
Reflection	$-f(x)$	
	$f(-x)$	
Vertical Dilation	$af(x)$ $0 < a < 1$	
	$af(x)$ $ a > 1$	
Horizontal Dilation	$f(bx)$ $0 < b < 1$	
	$f(bx)$ $ b > 1$	
Vertical Translation	$f(x) + k$	
	$f(x) - k$	
	$f(x + h)$	
Horizontal Translation	$f(x - h)$	

1. Directions: Describe the transformation of $f(x)$ represented by $g(x) = \sqrt[3]{x}$.

2. Directions: Describe the transformation of $f(x)$ represented by $g(x) = 2\sqrt[3]{x-4} - 2$.

- vertical stretch by 2
- horizontal shift right 4 units
- vertical shift down 2 units

x	-4	3	4	5	12
y	-6	-4	-2	0	2

Domain: $(-\infty, \infty)$

Range: $(-\infty, \infty)$

3. Directions: Let the graph of $g(x)$ be a horizontal compression by a factor of 3 of the graph of $f(x) = \sqrt[3]{x}$. Write a rule for $g(x)$.

$g(x) = f(3x)$

Answer key included

why do you need this?



It's simple and done-for-you! Just print and make copies!



Students can work on essential Algebra 2 skills.



Aligns to CCSS, TEKS, and VA SOLs!



Suggested and detailed answer keys are included for you!

Algebra 2 Guided Notes Transformations of Radical Functions

TRANSFORMATIONS OF RADICAL FUNCTIONS

2. **Directions:** Describe the transformation of $f(x)$ represented by $g(x)$. Then graph both functions.
 $f(x) = \sqrt[3]{x}$ $g(x) = 2\sqrt[3]{x-4} - 2$

Domain: _____
Range: _____

3. **Directions:** Let the graph of $g(x)$ be a horizontal translation of 3 units left of the graph of $f(x) = \sqrt{x}$.

4. **Directions:** Let the graph of $h(x)$ be a vertical translation of 3 units up of the graph of $f(x) = \sqrt{x}$.

TRANSFORMATIONS OF RADICAL FUNCTIONS

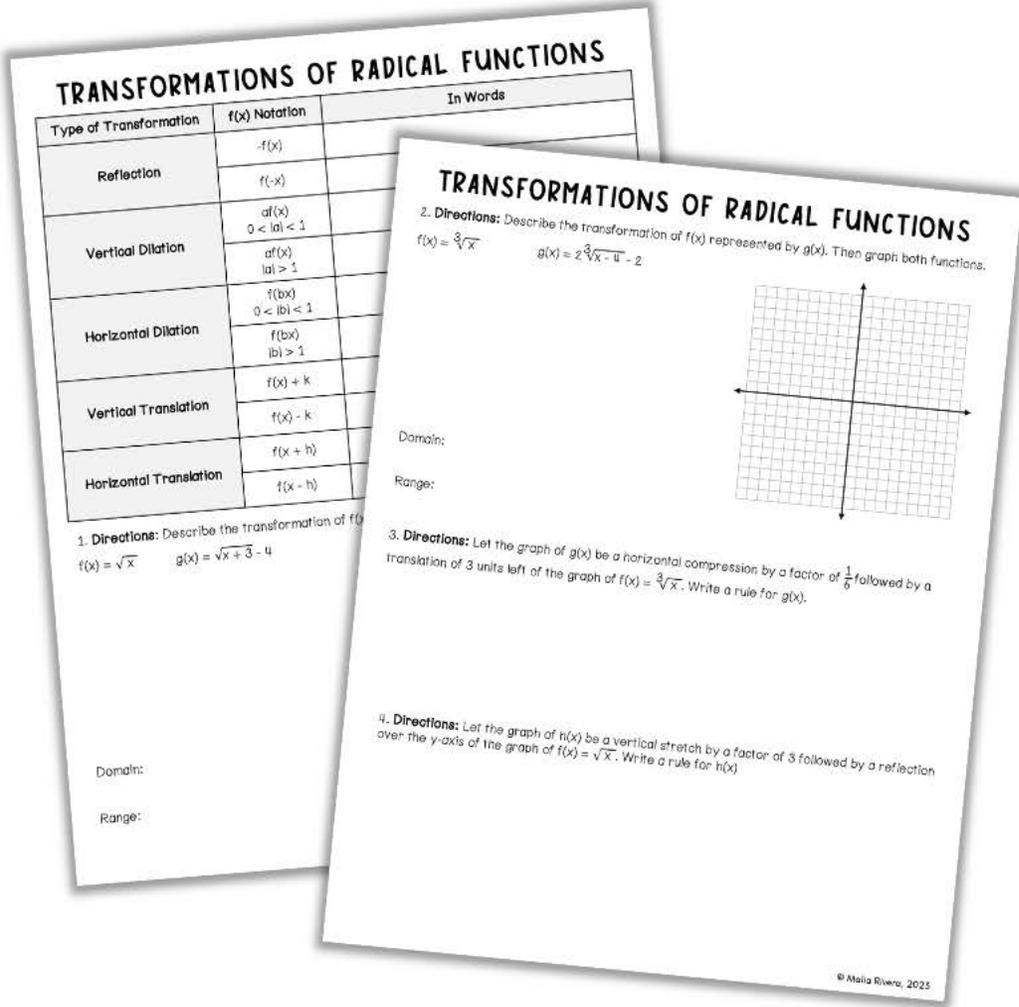
Type of Transformation	$f(x)$ Notation	In Words
Reflection	$-f(x)$	
	$f(-x)$	
Vertical Dilation	$af(x)$ $0 < a < 1$	
	$af(x)$ $ a > 1$	
Horizontal Dilation	$f(bx)$ $0 < b < 1$	
	$f(bx)$ $ b > 1$	
Vertical Translation	$f(x) + k$	
	$f(x) - k$	
Horizontal Translation	$f(x + h)$	
	$f(x - h)$	

1. **Directions:** Describe the transformation of $f(x)$ represented by $g(x)$. Then graph both functions.
 $f(x) = \sqrt{x}$ $g(x) = \sqrt{x+3} - 4$

Domain: _____
Range: _____

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Algebra 2 Guided Notes: Transformations of Radical Functions *includes:*



- ✓ 2 pages of guided notes
- ✓ Identifying Transformations from Equations
- ✓ Graphing Transformations
- ✓ Writing Equations of Radical Function Transformations
- ✓ Square and Cube Root Functions

Algebra 2 Guided Notes: Transformations of Radical Functions includes:

 Detailed answer keys

CCSS: HSF-IF.C.7b, HSF-BF.B.3

TEKS: A2.4.C, A2.6.A

VA SOL: EO.A11.6.a, EO.A11.6.b, EO.A11.7.a

TRANSFORMATIONS OF RADICAL FUNCTIONS

Type of Transformation	f(x) Notation	In Words
Reflection	$-f(x)$	Reflection across the x-axis
	$f(-x)$	Reflection across the y-axis
Vertical Dilation	$af(x)$ $0 < a < 1$	vertical compression
	$af(x)$ $ a > 1$	vertical stretch
Horizontal Dilation	$f(bx)$ $0 < b < 1$	horizontal stretch
	$f(bx)$ $ b > 1$	horizontal compression
Vertical Translation	$f(x) + k$	vertical shift up
	$f(x) - k$	vertical shift down
Horizontal Translation	$f(x + h)$	horizontal shift left
	$f(x - h)$	horizontal shift right

1. Directions: Describe the transformation of $f(x)$ represented by $g(x)$. Then graph both functions.

$f(x) = \sqrt{x}$ $g(x) = \sqrt{x+3} - 4$

- Horizontal shift left 3 units
- Vertical shift down 4 units

x	-3	-2	1	6
y	-4	-3	-2	-1

Domain: $[-3, \infty)$

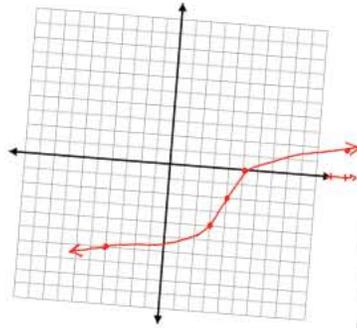
2. Directions: Describe the transformation of $f(x)$ represented by $g(x)$. Then graph both functions.

$f(x) = \sqrt[3]{x}$ $g(x) = 2\sqrt[3]{x-4} - 2$

- Vertical stretch by 2
- Horizontal shift right 4 units
- Vertical shift down 2 units

x	-4	3	4	5	12
y	-6	-4	-2	0	2

Domain: $(-\infty, \infty)$
Range: $(-\infty, \infty)$



3. Directions: Let the graph of $g(x)$ be a horizontal compression by a factor of $\frac{1}{6}$ followed by a translation of 3 units left of the graph of $f(x) = \sqrt[3]{x}$. Write a rule for $g(x)$.

$g(x) = f(6x) \rightarrow \sqrt[3]{6x}$
 $g(x) = f(x+3) \rightarrow \sqrt[3]{6(x+3)}$
 $g(x) = \sqrt[3]{6x+18}$

4. Directions: Let the graph of $h(x)$ be a vertical stretch by a factor of 3 followed by a reflection over the y-axis of the graph of $f(x) = \sqrt{x}$. Write a rule for $h(x)$.

$h(x) = 3f(x) \rightarrow 3\sqrt{x}$
 $h(x) = 3\sqrt{-x}$

Check out what *other teachers* are saying:



"This was great practice for my Algebra II students after I presented the lesson. Next Year, I may use them as notes."

- Vonda B.



"Great resource for what we were currently covering in precalc!"

- Megan M.



"I used this in conjunction with another document, but this would have worked fine on its own. The students found it much easier to understand the concept using these guided notes."

- Cheryl W.

You may also enjoy ...

SIMPLIFYING RATIONAL EXPRESSIONS

Algebra 2 Guided Notes

ANSWER KEY INCLUDED

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MULTIPLYING & DIVIDING RATIONAL EXPRESSIONS

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SIMPLIFYING COMPLEX FRACTIONS

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TRANSFORMATIONS OF FUNCTIONS

Type of Transformation	f(x) Notation
Reflection	$-f(x)$
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Horizontal Dilation	$f(bx)$ $0 < b < 1$ $ b > 1$
Vertical Translation	$f(x) + k$

LINEAR REGRESSION

SCATTER PLOT
Definition: A graph of _____ points that are _____

SCATTER PLOT RELATIONSHIPS

LINE OF BEST FIT
Definition: A line that _____ as close as possible to all _____

LINEAR REGRESSION
Definition: A linear model that is used to _____ between two variables.

LINEAR INTERSECTIONS
Estimating Slope: _____
Slope: _____
Y-intercept: _____

GRAPHING QUADRATIC TRANSFORMS

Reflection over the x-axis: _____

COMPOSITION OF FUNCTIONS

Definition: To make the _____ of another function.

Things to remember:

- Always start with the _____ the function on the _____
- Tag does not always equal _____

$(f \circ g)(x) = \dots$ is _____

$g(x) = 2x + 3$ and $f(x) = x^2$, find $(f \circ g)(x)$

$g(x) = 2x + 3$ and $f(x) = x^2$, find $(f \circ g)(x)$

COMPOUND INEQUALITIES

A compound inequality has two separate inequalities joined by _____

The graph of the _____ of the graphs of _____

$x > 3$

POLYNOMIAL FUNCTION CHARACTERISTICS

Characteristics	Graph
Intercepts	
Touch	
Inflection	

RELATIVE EXTREMA (Minimum or Maximum)
Points on the graph that help to describe the _____ of a function. They are also called _____

INCREASING INTERVALS
The interval between _____ y-values as the x-value _____

DECREASING INTERVALS
The interval between _____ y-values as the x-value _____

POSITIVE INTERVALS
Intervals where _____

PROPERTIES OF RATIONAL EXPONENTS & RADICALS

Property	Properties of Rational Exponents
Product of Powers	Definition: _____
Power of a Power	_____
Power of a Product	_____
Negative Exponent	_____
Zero Exponent	_____
Quotient of Powers	_____
Power of a Quotient	_____

Directions: Use the properties of rational exponents to simplify: $1. (y^{1/2} \cdot y^{1/3})^2$

Answer key included

Math with Ms. Rivera

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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 Transformations of Radical Functions guided notes for Algebra 2 that can be used all year long!

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