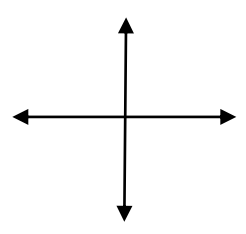
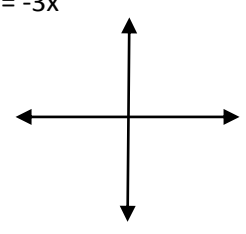
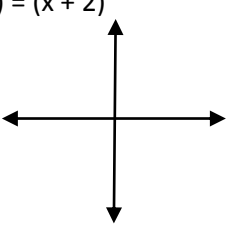
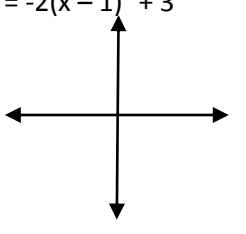
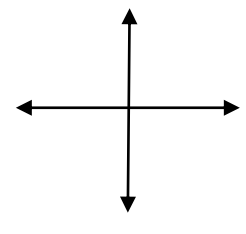
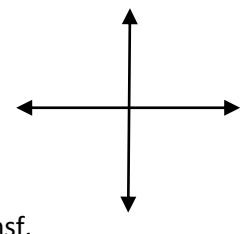
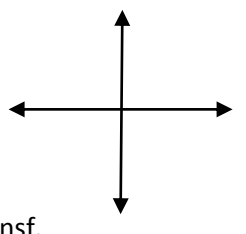
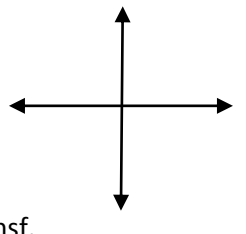
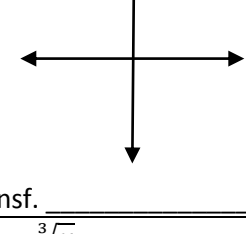
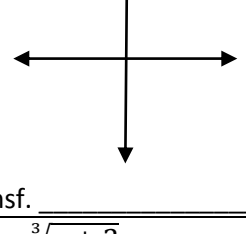
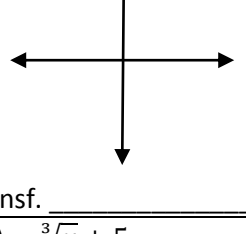
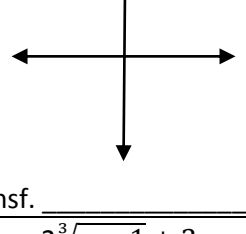
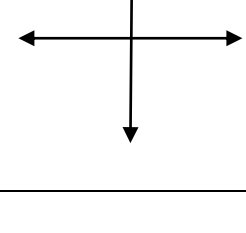
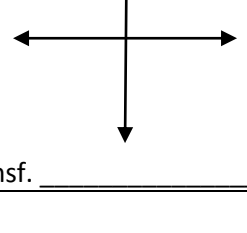
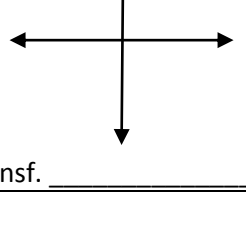
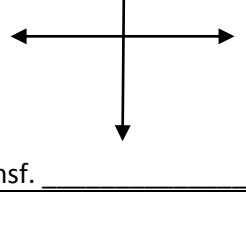


Graphing Radical Functions

Name _____

Exploration

Using Desmos or a graphing calculator, graph the following functions. Make a quick sketch, then describe their transformations from their parent functions in the first column. To graph a square root, type **sqrt** or use the square root button on the keypad. To graph the cube root type **nthroot** and type a **3** or click on **keypad > functions > misc** and choose the cube root.

Quadratic	$f(x) = x^2$ 	$f(x) = -3x^2$  transf. _____	$f(x) = (x + 2)^2$  transf. _____	$f(x) = -2(x - 1)^2 + 3$  transf. _____
Square Root	$f(x) = \sqrt{x}$ 	$f(x) = -3\sqrt{x}$  transf. _____	$f(x) = \sqrt{x + 2}$  transf. _____	$f(x) = -2\sqrt{x - 1} + 3$  transf. _____
Cubic	$f(x) = x^3$  transf. _____	$f(x) = (x + 2)^3$  transf. _____	$f(x) = x^3 + 5$  transf. _____	$f(x) = -2(x - 1)^3 + 3$  transf. _____
Cube Root	$f(x) = \sqrt[3]{x}$ 	$f(x) = \sqrt[3]{x + 2}$  transf. _____	$f(x) = \sqrt[3]{x} + 5$  transf. _____	$f(x) = -2\sqrt[3]{x - 1} + 3$  transf. _____

Reflections

What does "h" do to the graph of the function $f(x) = a\sqrt{x - h} + k$? _____

What effect does "k" have on the graph of the function $f(x) = a\sqrt[3]{x - h} + k$? _____

What effect does "a" have on the graph of a square root function? _____

Graph $y = x^3$, $y = \sqrt[3]{x}$ and $y = x$ on the same coordinate plane. How are the graphs related? _____
