

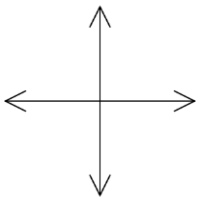
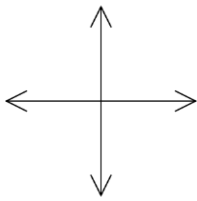
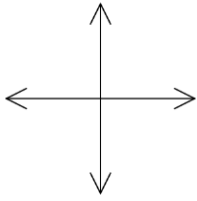
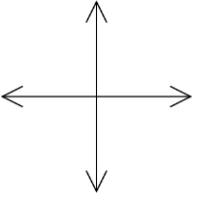
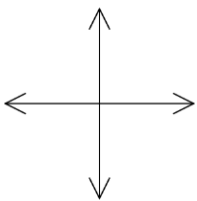
2.3

Date:

Objective:

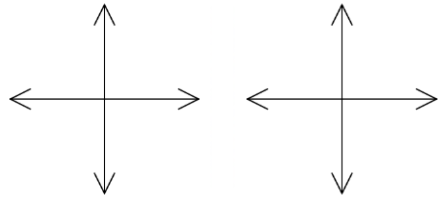
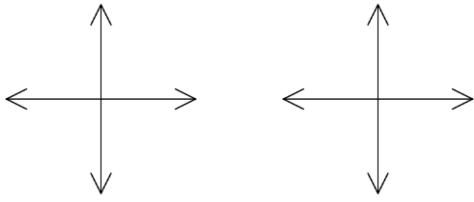
A. Review Parent Functions

1) Draw a sketch of each parent function.

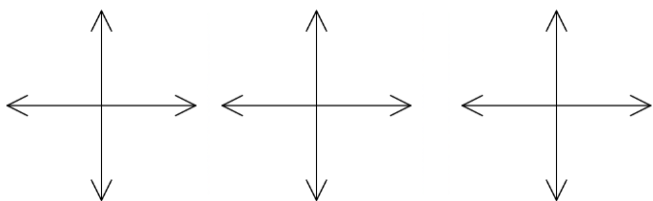
Absolute Value $f(x) = x $ 	Quadratic $f(x) = x^2$ 	Square Root $f(x) = \sqrt{x}$ 
	Cubic $f(x) = x^3$ 	Cube Root $f(x) = \sqrt[3]{x}$ 

B. Transformations

Graph the following functions and answer the questions.

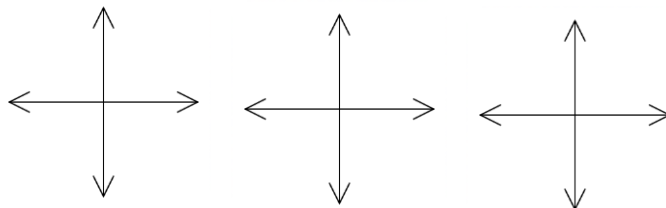
1) $f(x) = \sqrt{x}$, $f(x) = -\sqrt{x}$  What does the negative in front of the entire function $f(x)$ do?	2) $f(x) = \sqrt{x}$, $f(x) = \sqrt{-x}$  What does the negative in front of x do?
---	---

3) $f(x) = \sqrt{x}$, $f(x) = 2\sqrt{x}$, $f(x) = \frac{1}{2}\sqrt{x}$



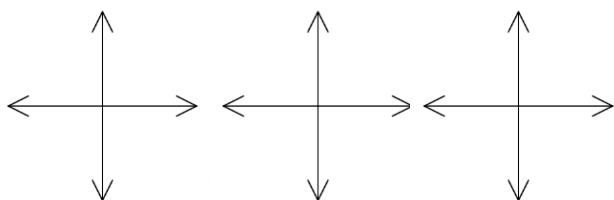
What does the a do?

4) $f(x) = \sqrt{x}$, $f(x) = \sqrt{2x}$, $f(x) = \sqrt{\frac{1}{2}x}$



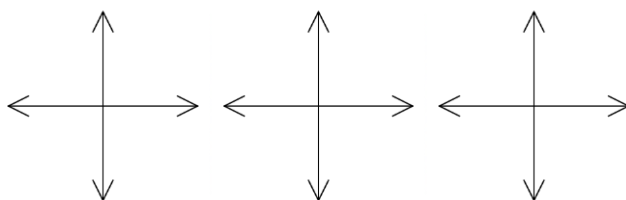
What does the b do?

5) $f(x) = \sqrt{x}$, $f(x) = \sqrt{x+3}$, $f(x) = \sqrt{x-3}$



What does the k do?

6) $f(x) = \sqrt{x}$, $f(x) = \sqrt{x-5}$, $f(x) = \sqrt{x+5}$



What does the h do?

C. Write an equation.

Given the parent function and a list of transformations, write an equation for the function.

1) **Parent function:** $f(x) = x^2$

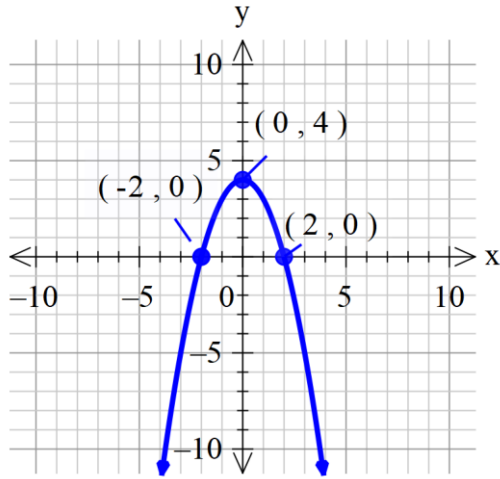
Transformations: reflect over x-axis, translate up 3

2) **Parent function:** $f(x) = \sqrt[3]{x}$

Transformations: Vertical shrink of $\frac{1}{3}$, translate left 3 and down 6

Determine the transformations used to change the given parent function to the function that is graphed. Then write an equation for the function graphed.

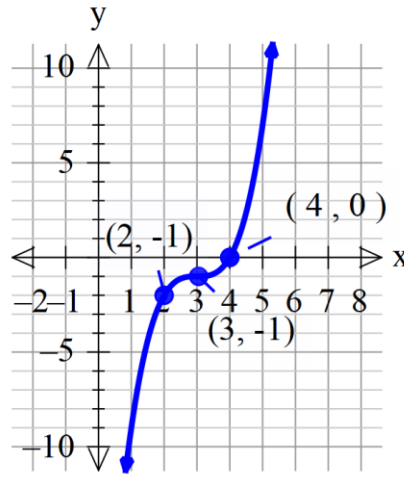
1)



Transformations:

Equation:

2)



Transformations:

Equation:

Determine the transformations used to change the given parent function to the new function.

1. $f(x) = -2(x - 1)^2 + 6$

Parent function: _____

a = ____ b = ____ h = ____ k = ____

Transformations:

2. $f(x) = \sqrt[3]{3(x + 8)} - 2$

Parent function: _____

a = ____ b = ____ h = ____ k = ____

Transformations:

3. $f(x) = -\frac{1}{2}|x - 4| + 2$

Parent function: _____

a = ____ b = ____ h = ____ k = ____

Transformations:

4. $f(x) = 3\sqrt{-(x + 1)} - 5$

Parent function: _____

a = ____ b = ____ h = ____ k = ____

Transformations: