

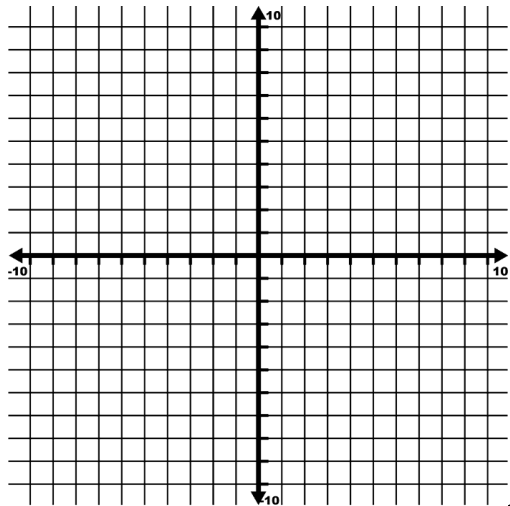
Algebra I - Allen-Black / Gulamali  
 Parent Graphs of Key Functions

Name \_\_\_\_\_

Pd. \_\_\_\_\_ Date \_\_\_\_\_

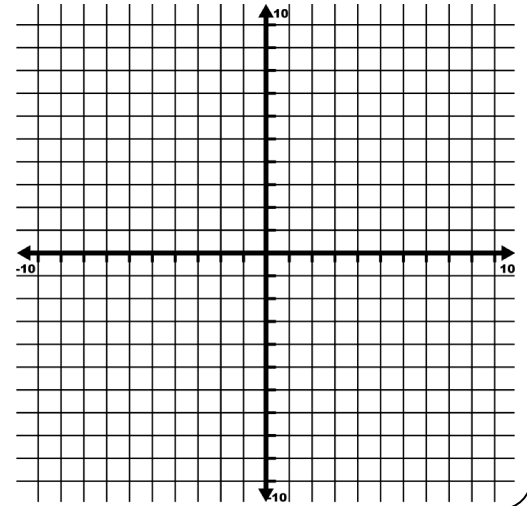
$f(x) = x$  (Linear Function)

x	y
6	
2	
0	
-2	
-6	



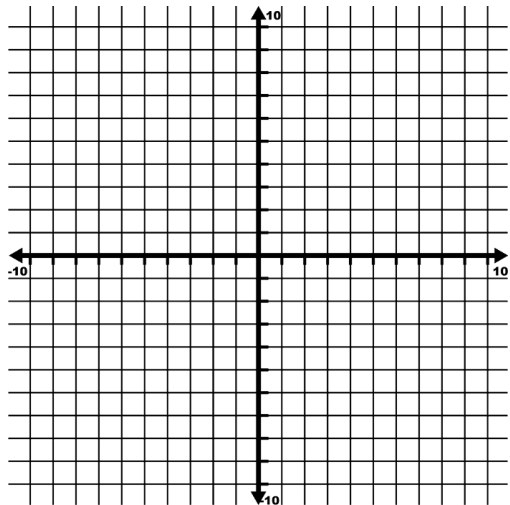
$f(x) = |x|$  (Absolute Value Function)

x	y
6	
2	
0	
-2	
-6	



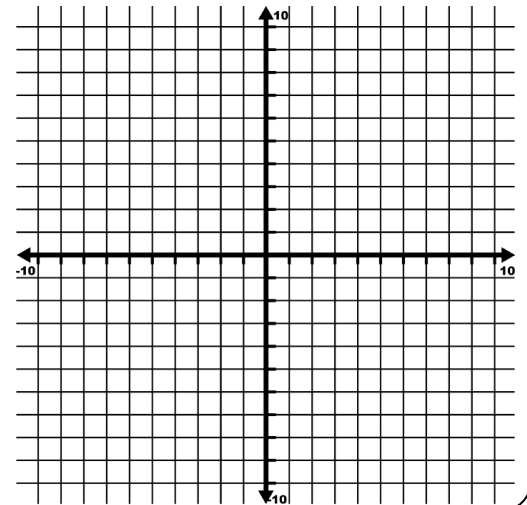
$f(x) = x^2$  (Quadratic Function)

x	y
2	
1	
0	
-1	
-2	



$f(x) = \sqrt{x}$  (Square Root Function)

x	y
4	
1	
0	
-1	
-4	

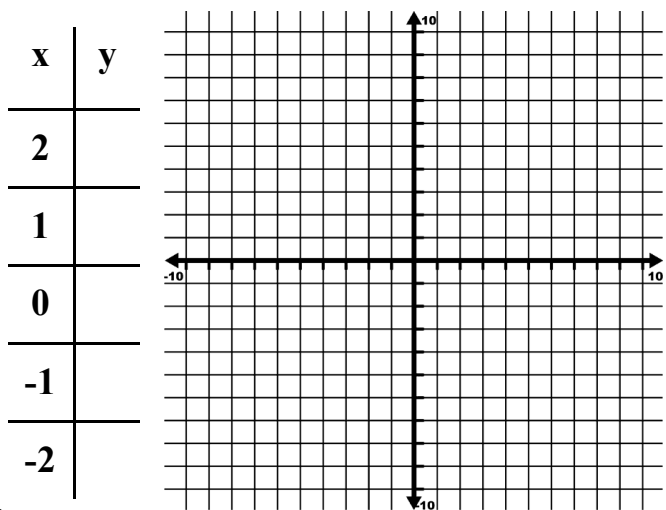


Algebra I - Allen-Black / Gulamali  
 Parent Graphs of Key Functions

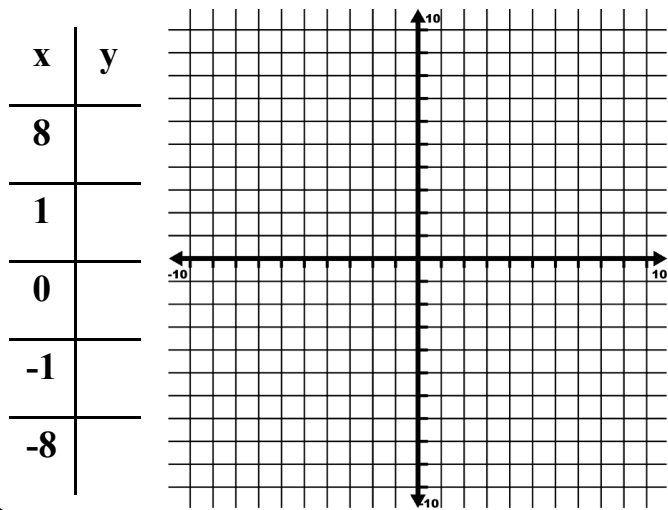
Name \_\_\_\_\_

Pd. \_\_\_\_\_ Date \_\_\_\_\_

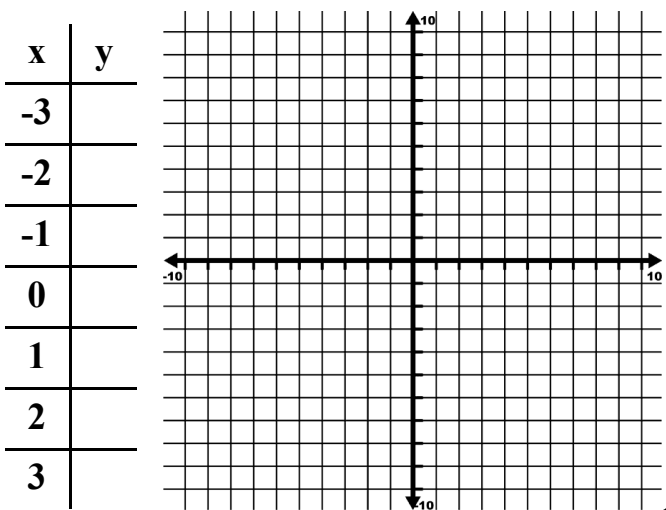
$f(x) = x^3$  (Cubic Function)



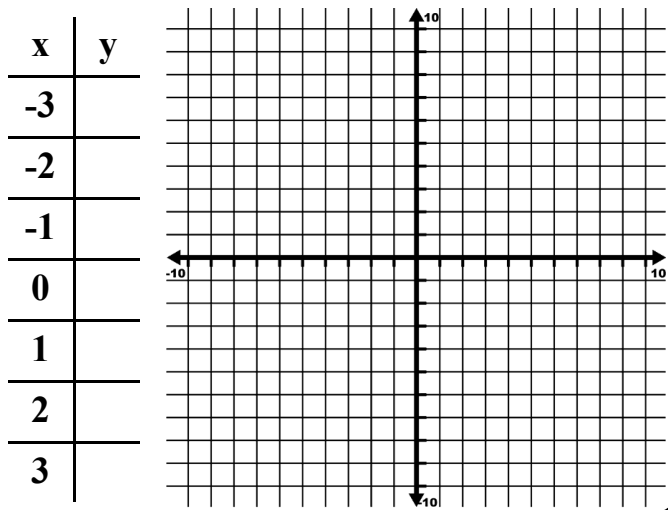
$f(x) = \sqrt[3]{x}$  (Cube Root Function)



$f(x) = 2^x$  (Exponential Growth)

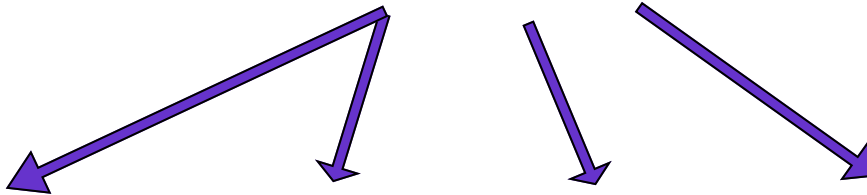


$f(x) = (\frac{1}{2})^x$  (Exponential Decay)



## Parent Graph Transformation Summary

$$y = a \cdot f(x - h) + k$$



What does the graph look like when the value of “a” is positive?

What happens to the graph if the value of “a” is negative?

What happens to the graph when the value of “a” is greater than one? (Describe the graph in words)

What happens to the graph when the value of “a” is a fraction between 0 and 1?

How does the value of “h” affect the graph?

If you see (x-h), how does the graph shift?

If you see (x+h), how does the graph shift?

What is critical to remember about the “h” value or horizontal shift of a graph?

How does the value of “k” affect the graph?

If “k” is positive, how does the graph shift?

If “k” is negative, how does the graph shift?