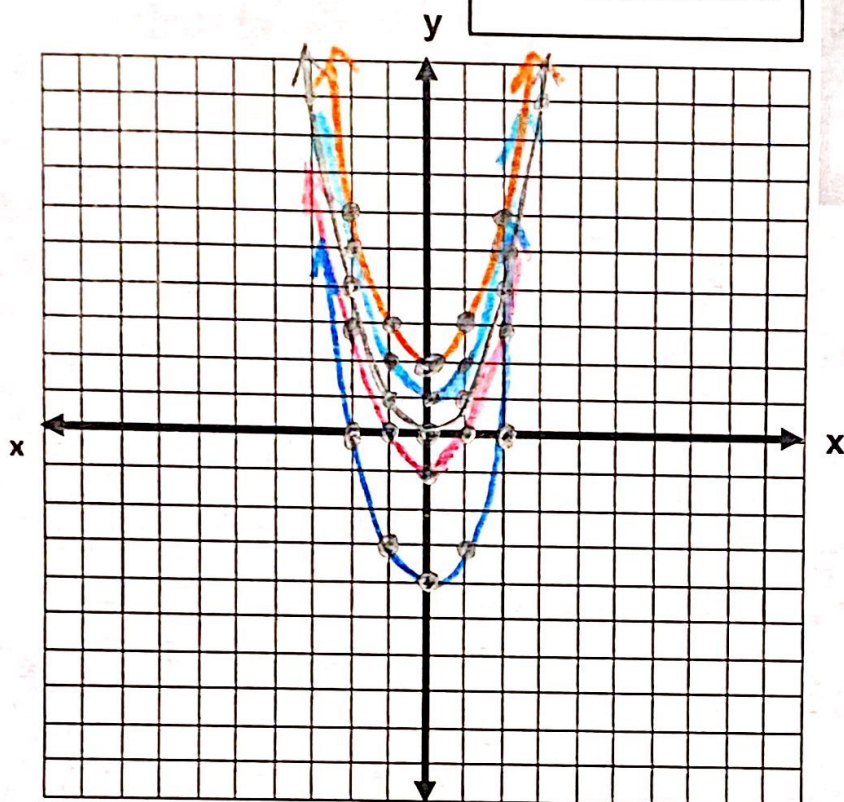


# Quadratic Functions

Vertical Translation



**Quadratic Functions in the Form of  $f(x) = x^2 + k$**

Complete the table and graph each in a different color on the graph to the right. (Sketch parent graph  $f(x) = x^2$  in pencil.)

$f(x) = x^2 + 2$	
x	f(x)
-2	6
-1	3
0	2
1	3
2	6
y-int = (0, 2)	

$f(x) = x^2 - 4$	
x	f(x)
-2	0
-1	-3
0	-4
1	-3
2	0
y-int = (0, -4)	

How are the graphs alike?  
Same shape

How are the graphs different?  
different vertices

Write the equation of a function in this family with a y-intercept of -3?  $f(x) = x^2 - 3$

Write the equation of a function in this family with a y-intercept of +7?  $f(x) = x^2 + 7$

Write the equation of a function in this family with a y-intercept of -10?  $f(x) = x^2 - 10$

$f(x) = x^2 + 1$	
x	f(x)
-2	5
-1	2
0	1
1	2
2	5
y-int = (0, 1)	

$f(x) = x^2 - 1$	
x	f(x)
-2	3
-1	0
0	-1
1	0
2	3
y-int = (0, -1)	