

Lesson 8.1

GRAPHING QUADRATIC FUNCTIONS  
 $F(X) = AX^2$

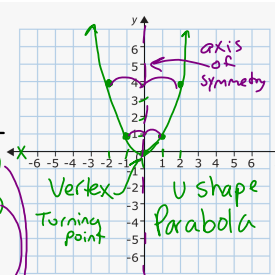
Your Name  
 Mrs. Theo  
 3/17/21  
 Notes

Graphing  
 Parent  
 Quadratic  
 Function

Via XY Table

Graph  $y = x^2$

x	$f(x) = ( )^2$	(x, y)
-2	$f(-2) = (-2)^2 = 4$ <small>-2 · -2</small>	(-2, 4)
-1	$f(-1) = (-1)^2 = 1$ <small>-1 · -1 = 1</small>	(-1, 1)
0	$f(0) = (0)^2 = 0$ <small>0 · 0 = 0</small>	(0, 0)
1	$f(1) = (1)^2 = 1$	(1, 1)
2	$f(2) = (2)^2 = 4$ <small>2 · 2 = 4</small>	(2, 4)

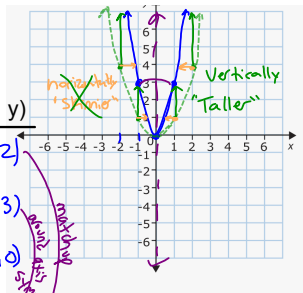


Describe the Change  
 No change

Graphing  
 Stretches

Graph  $y = 3x^2$

x	$y = 3( )^2$	(x, y)
-2	$f(-2) = 3(-2)^2 = 12$ <small>3 · (-2) · (-2)</small>	(-2, 12)
-1	$f(-1) = 3(-1)^2 = 3$ <small>3 · (-1) · (-1)</small>	(-1, 3)
0	$f(0) = 3(0)^2 = 0$ <small>3 · (0) · (0)</small>	(0, 0)
1	$f(1) = 3(1)^2 = 3$ <small>3 · (1) · (1)</small>	(1, 3)
2	$f(2) = 3(2)^2 = 12$ <small>3 · 2 · 2</small>	(2, 12)



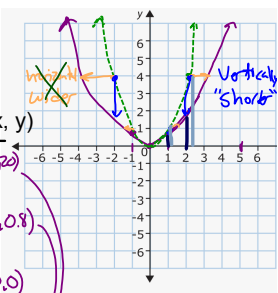
Describe the Dilation  
 Vertical stretch  
 horizontal shrink

Graphing  
 Shrinks

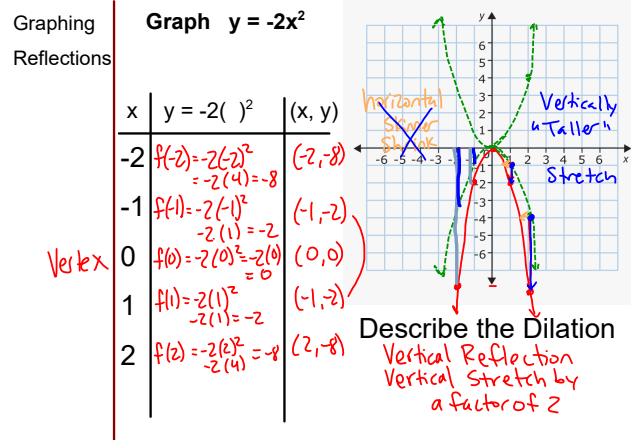
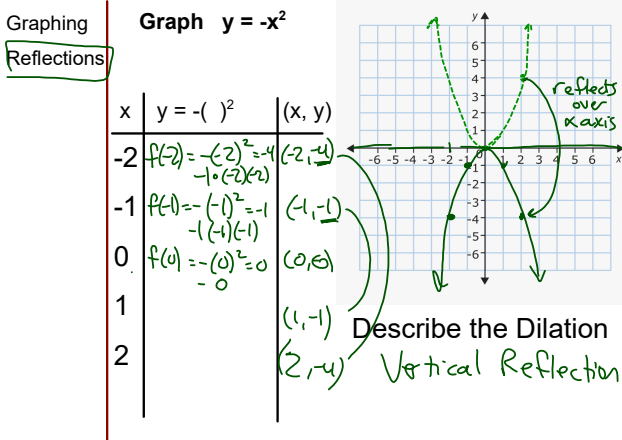
in Quadratic  
 Functions Via  
 XY Table

Graph  $y = 4/5x^2$

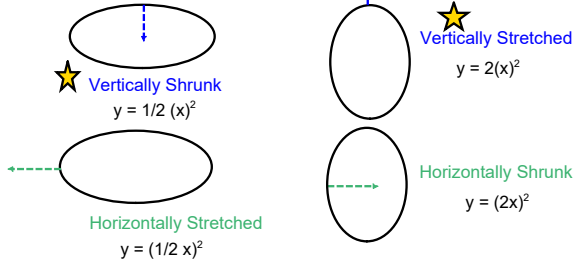
x	$y = 4/5( )^2$	(x, y)
-5	$f(-5) = \frac{4}{5}(-5)^2 = 20$ <small>1/5 · 20 = 4</small>	(-5, 20)
-1	$f(-1) = \frac{4}{5}(-1)^2 = 0.8$ <small>1/5 · 4 = 0.8</small>	(-1, 0.8)
0	$f(0) = \frac{4}{5}(0)^2 = 0$ <small>0/5 = 0</small>	(0, 0)
1	$f(1) = \frac{4}{5}(1)^2 = 0.8$	(1, 0.8)
5	$f(5) = \frac{4}{5}(5)^2 = 20$	(5, 20)



Describe the Shift  
 Vertical shrink  
 horizontal stretch



Perspective!



Homework Key

