

# 1.7c Practice

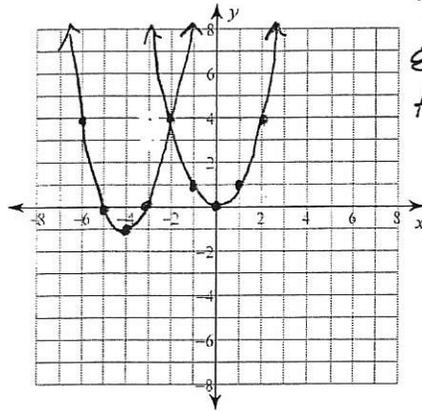
Name Key Date \_\_\_\_\_

## Graphing: Parent Functions and Transformations

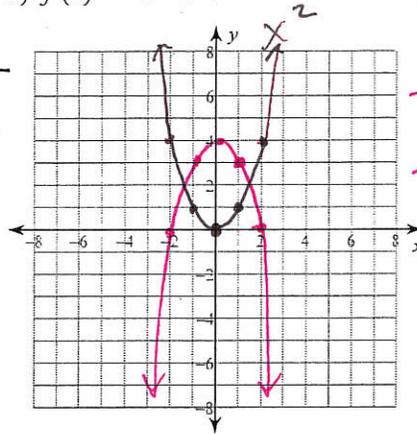
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Directions: A) Describe the series of transformations.  
B) Graph the Parent Function.

1)  $f(x) = (x+4)^2 - 1$  C) Graph the new function. 2)  $f(x) = -x^2 + 4$

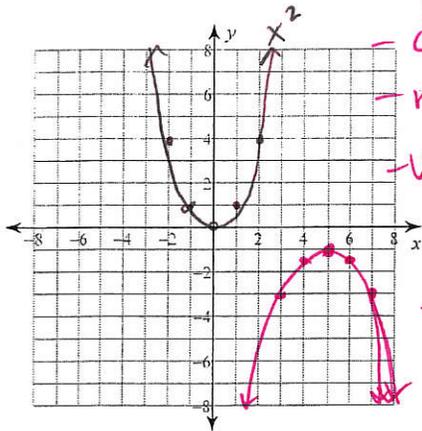


Example:  
A) shift down 1  
shift left 4



~~graph~~  
-reflect (x)  
-up 4

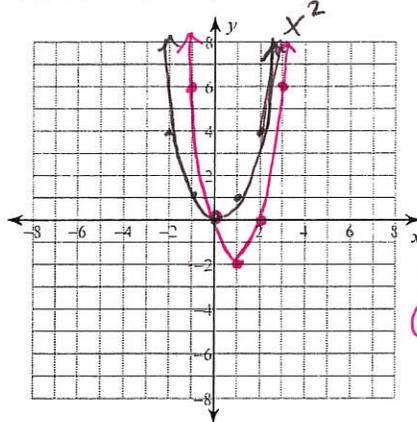
3)  $f(x) = -\frac{1}{2}(x-5)^2 - 1$



-reflect (x)  
-down 1  
-right 5  
-vertical compression (1/2 y)

x	y
6	-1.5
7	-3

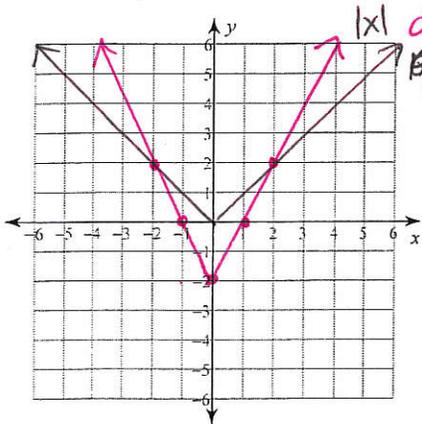
4)  $f(x) = 2(x-1)^2 - 2$



-down 2  
-right 1  
-vertical stretch

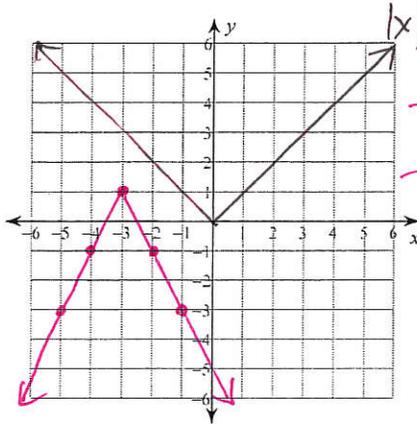
- plot vertex
- | x | y |
|---|---|
| 2 | 0 |
| 3 | 6 |

5)  $y = 2|x| - 2$



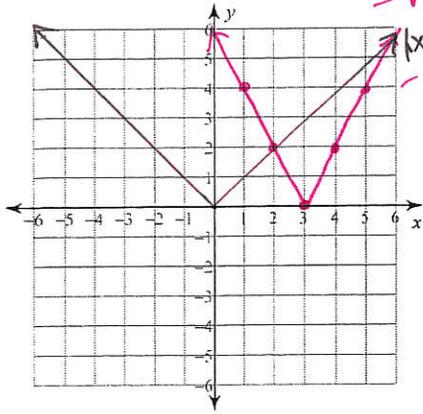
down 2  
vertical stretch  
→ double y

6)  $y = -2|x+3| + 1$



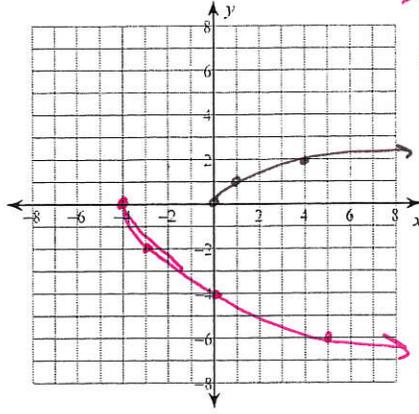
-reflect (x)  
-up 1  
-left 3  
-vertical stretch (double y)

7)  $y = 2|x - 3|$



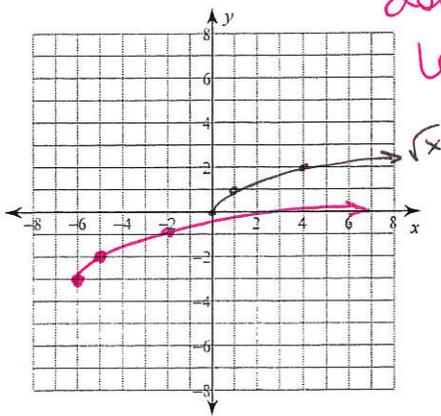
- right 3  
vertical stretch  
(double y)

8)  $y = -2\sqrt{x + 4}$



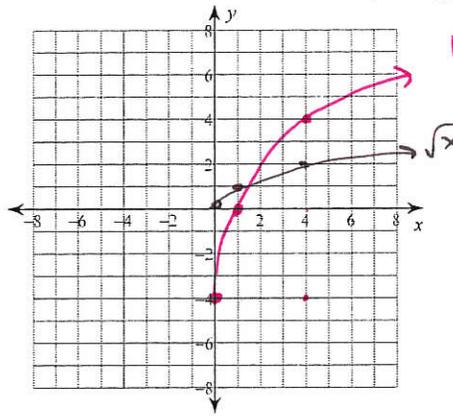
- reflect (x)  
- left 4  
- vertical stretch  
(double y)

9)  $y = \sqrt{x + 6} - 3$



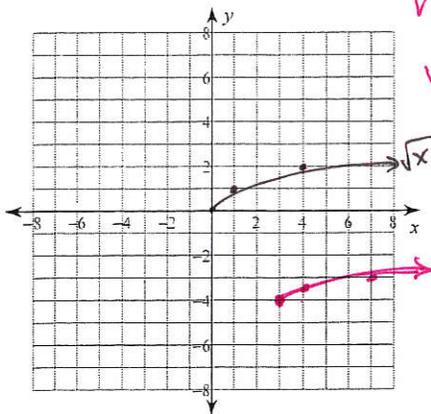
down 3  
left 6

10)  $y = 4\sqrt{x} - 4$



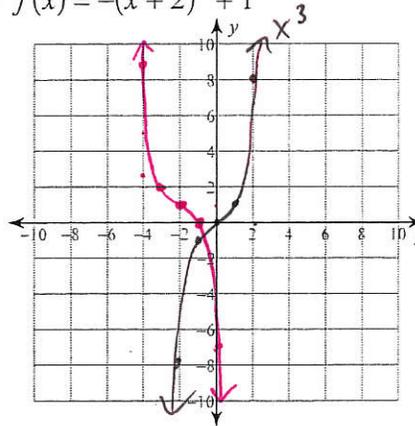
down 4  
vertical stretch  
(4y)

11)  $y = \frac{1}{2}\sqrt{x - 3} - 4$



down 4  
right 3  
vertical compression  
(1/2 y)

12)  $f(x) = -(x + 2)^3 + 1$



reflect (x)  
up 1  
left 2