

Name Key  
 8A: Algebra 1

Date \_\_\_\_\_  
 Period \_\_\_\_\_

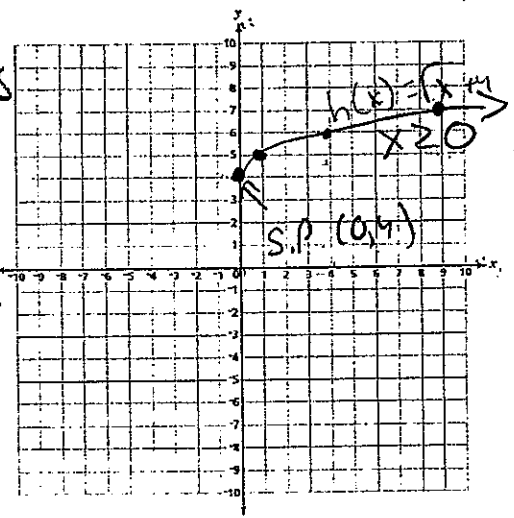
Homework

#1-8 Name the Parent Function. Describe the transformation. Graph the equation. List the Domain and the Range of the function.

1)  $h(x) = \sqrt{x+4}$   
 S.P.: (0, 4)  
 Parent Function: square root,  $h(x) = \sqrt{x}$   
 Transformation: translated 4 units up from (0, 0)  
 Domain:  $\{x | x \geq 0\}$  or  $[0, \infty)$   
 Range:  $\{y | y \geq 4\}$  or  $[4, \infty)$   
*Set builder*      *interval notation*

X	h(x)
0	4
1	5
4	6
9	7

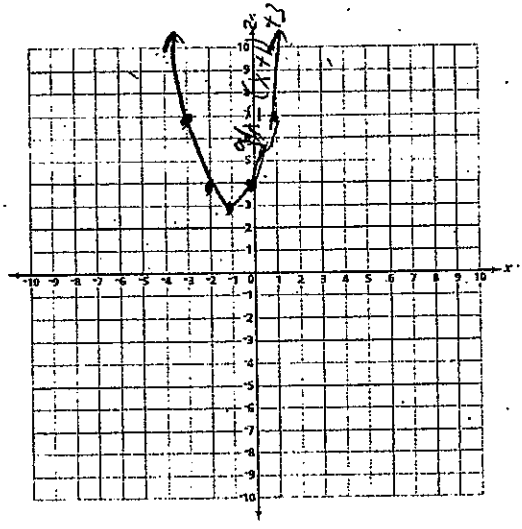
*starting point* (at 0, 4)  
*whole number integers only*



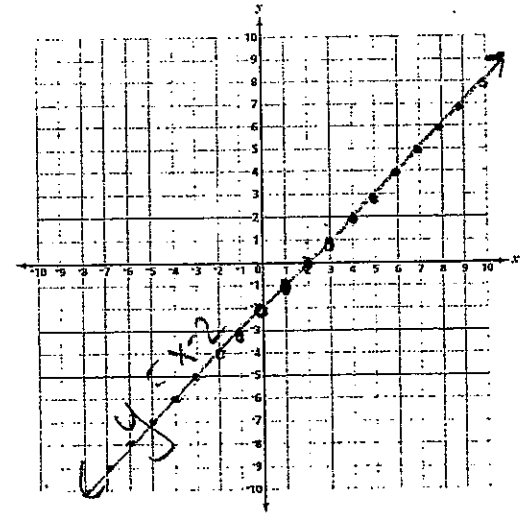
$f(x) = (x+1)^2 + 3$     V: (-1, 3)  
 Parent Function: Quadratic,  $g(x) = x^2$   
 Transformation: Translated 1 unit left & 3 up from (0, 0)  
 Domain: all reals  $\{x | x \in \mathbb{R}\}$  or  $(-\infty, \infty)$   
 Range:  $\{y | y \geq 3\}$  or  $[3, \infty)$

X	g(x)
-3	7
-2	4
-1	3
0	4
1	7

*stars*  
*B/c no constraints given*



3)  $y = x - 2$   
 y-int (0, -2)  
 Parent Function: linear,  $y = x$   
 Transformation: translated 2 units down from (0, 0)  
 Domain: all reals  $\{x | x \in \mathbb{R}\}$  or  $(-\infty, \infty)$   
 Range: all reals  $\{y | y \in \mathbb{R}\}$  or  $(-\infty, \infty)$



4)  $f(x) = |x+5| - 2$  v'  $(-5, -2)$

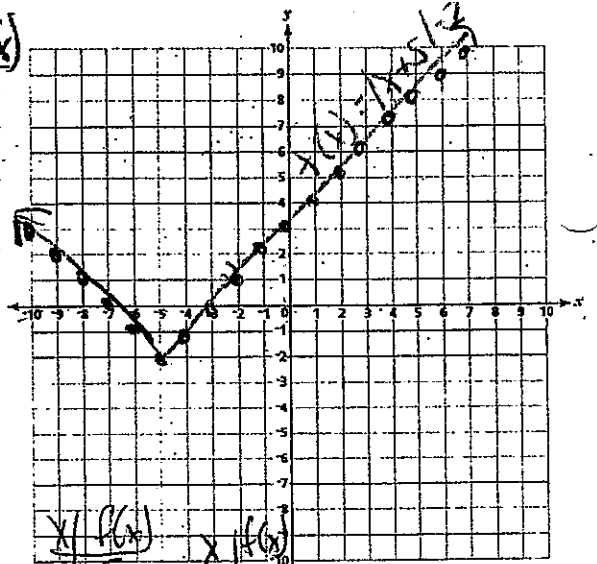
Parent Function: absolute value  $f(x) = |x|$

Transformation: translated 5 units left + 2 units down from  $(0,0)$

Domain: all reals,  $\{x | x \in \mathbb{R}\}$  or  $(-\infty, \infty)$

Range:  $y \geq -2$  or  $[-2, \infty)$

X	f(x)
-10	3
-9	2
-8	1
-7	0
-6	-1
-5	-2
-4	-1
-3	0
-2	1
-1	2
0	3



X	f(x)
2	5
3	6
4	7
5	8
6	9
7	10

5)  $g(x) = \sqrt{x+2} - 5$   
S.P.  $(-2, -5)$

Domain:  $x+2 \geq 0$   
 $x \geq -2$

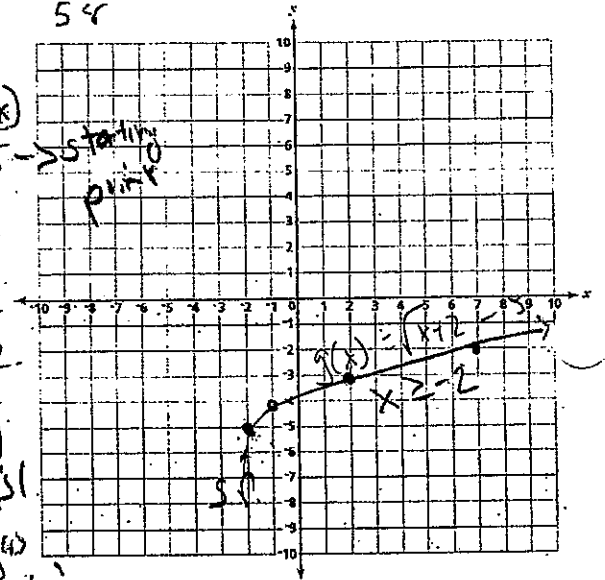
Parent Function: square root,  $g(x) = \sqrt{x}$

Transformation: translated 2 units left + 5 units down from  $(0,0)$

Domain:  $x \geq -2$  or  $[-2, \infty)$

Range:  $y \geq -5$  or  $[-5, \infty)$

X	g(x)
-2	-5
-1	-4
2	-3
7	-2



6)  $h(x) = x^3 + 1$

Parent Function: Cubic  $h(x) = x^3$

Transformation: Translated 1 unit up from  $(0,0)$

Domain: all reals,  $(-\infty, \infty)$  or  $\{x | x \in \mathbb{R}\}$

Range: all reals,  $(-\infty, \infty)$  or  $\{y | y \in \mathbb{R}\}$

X	h(x)
-2	-7
-1	0
0	1
1	2
2	9

