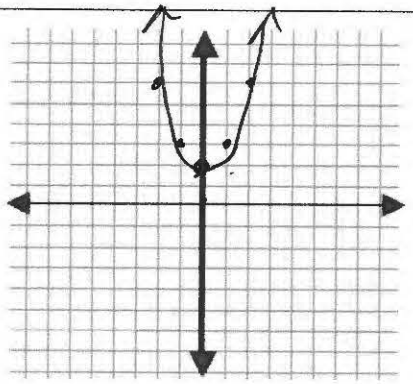
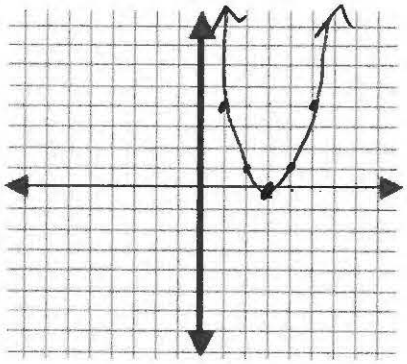
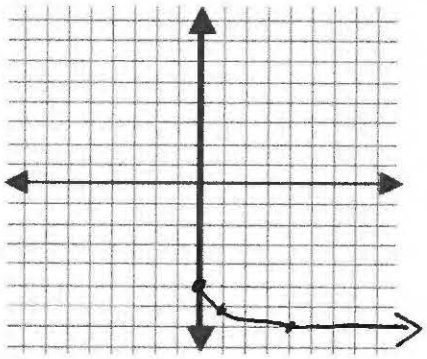
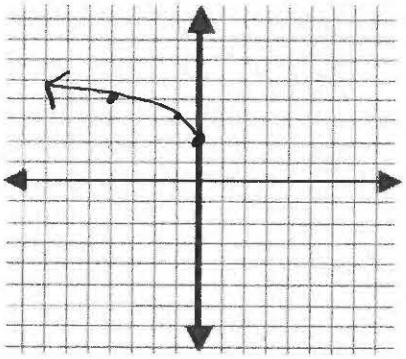
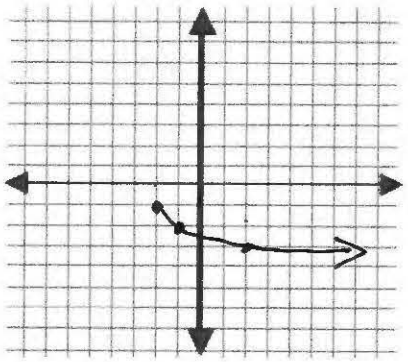
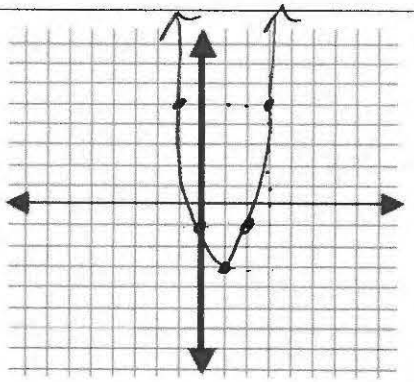
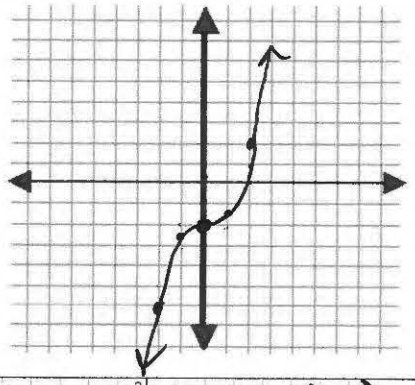
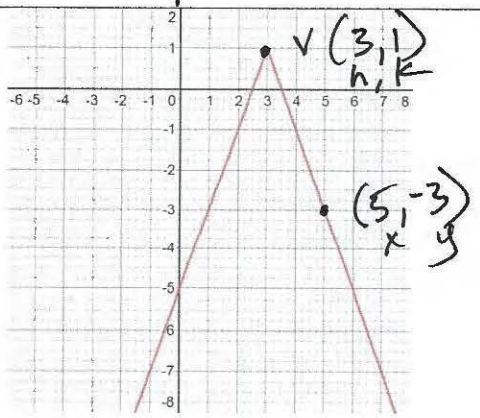
KEY

Class Work for Transformations of Functions

	Function	Transformed Locator Point	Graph
1	$g(x) = x^2 + 2$ 	2 UP	
2	$h(x) = (x-3)^2$ 	3 R	
3	$g(x) = -\sqrt{x} - 5$ 	Reflect up/down Down 5	
4	$h(x) = \sqrt{-x} + 2$ 	Reflect left/right 2 UP	

5	$k(x) = -\sqrt{x+2} - 1$ 	reflect up/down 2 L 1 D	
6	$g(x) = 2(x-1)^2 - 3$ 	1 R 3 D stretch x 2	
7	$k(x) = \frac{1}{2}x^3 - 2$ 	compress by $\frac{1}{2}$ down 2	
8	Abs Value $y = a\|x-h\| + k$ $-3 = a\|5-3\| + 1$ $-3 = 2a + 1$ $-4 = 2a$ $-2 = a$ $y = -2\|x-3\| + 1$		

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Parabola h k
Vertex (-1, 0)
extra point (1, 2)

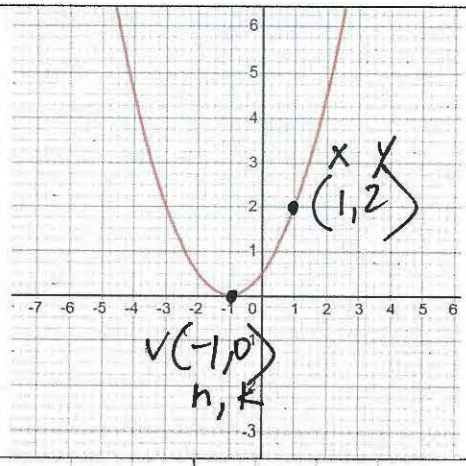
$y = a(x-h)^2 + k$

$2 = a(1+1)^2 + 0$

$2 = 4a$

$a = \frac{1}{2}$

$y = \frac{1}{2}(x+1)^2$



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Square Root

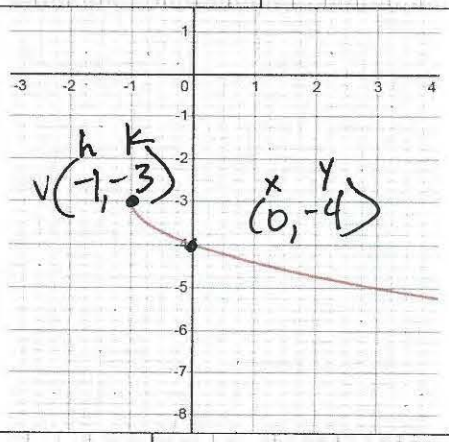
$y = a\sqrt{x-h} + k$

$-4 = a\sqrt{0+1} - 3$

$-4 = a - 3$

$a = -1$

$y = -\sqrt{x+1} - 3$



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Square Root

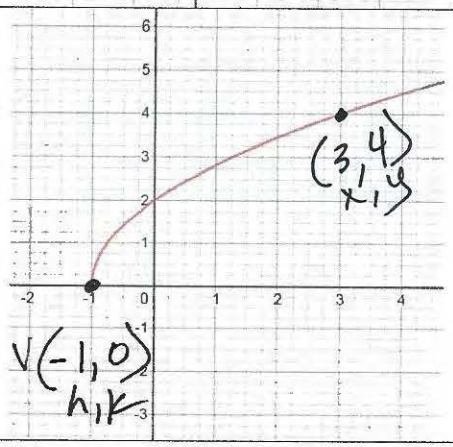
$y = a\sqrt{x-h} + k$

$4 = a\sqrt{3+1} + 0$

$4 = 2a$

$a = 2$

$y = 2\sqrt{x+1}$



General Eq.

Absolute Value: $y = a|x-h| + k$

Square Root: $y = a\sqrt{x-h} + k$

Quadratic: $y = a(x-h)^2 + k$

(h, k) = vertex

Cubic: $y = a(x-h)^3 + k$