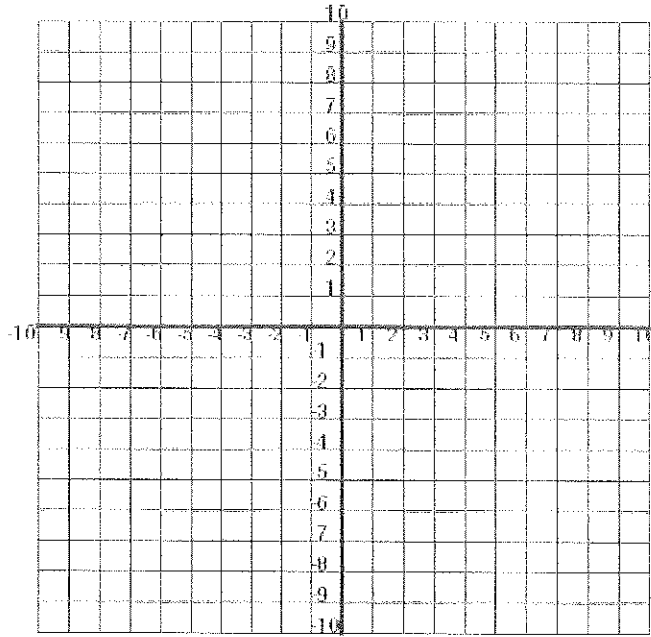


Alg. 2 – Parent Graphs & Transformations

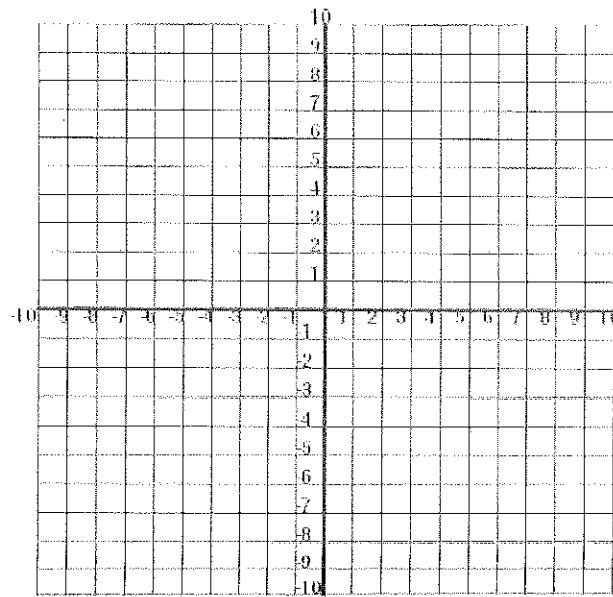
1. Parent Function: $y = x$

X	Y
-5	
-4	
-3	
-2	
-1	
0	
1	
2	
3	
4	
5	



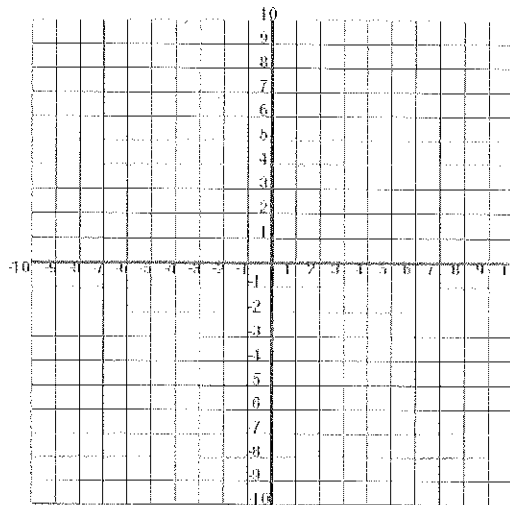
2. Parent Function: $y = |x|$

X	Y



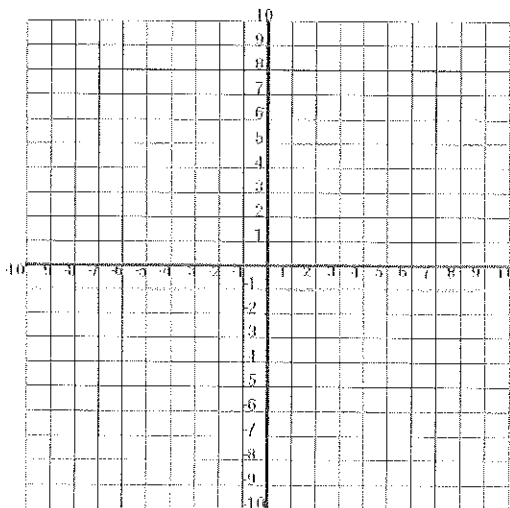
3. Parent Function: $y = x^2$

X	Y



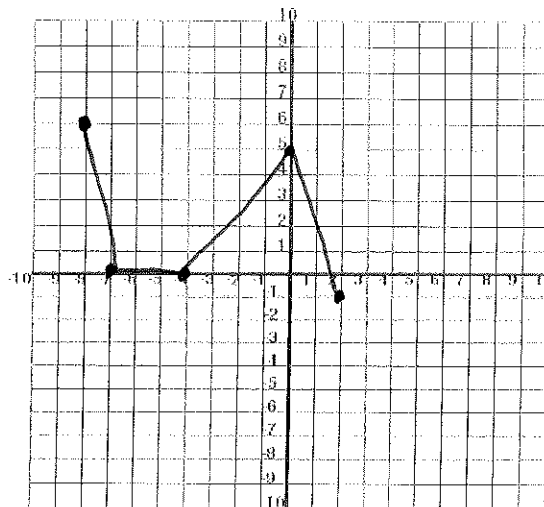
4. Parent Function: $y = \sqrt{x}$

X	Y



5. Parent Function: $y = h(x)$

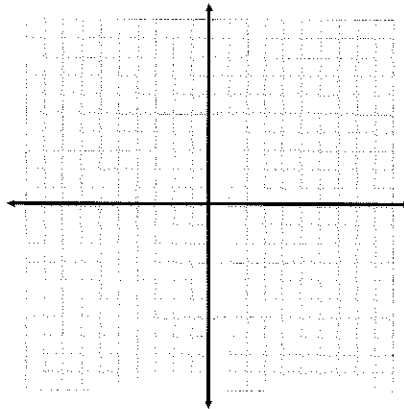
X	Y



For problem 1- 6, please give the name of the parent function and describe the transformation represented. You may use your graphing calculator to compare & sketch.

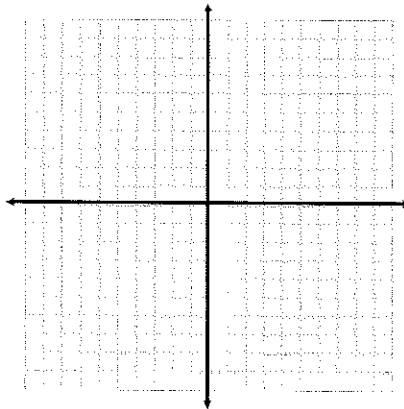
1. $g(x) = x^2 - 1$ Parent: _____

Transformations: _____



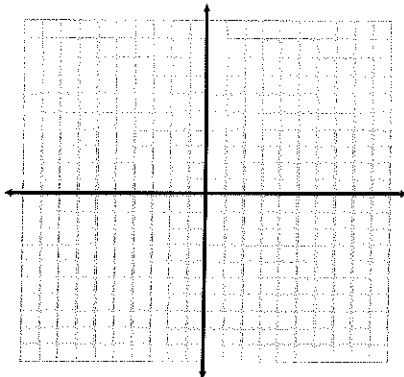
2. $f(x) = 2|x-1|$ Parent: _____

Transformations: _____



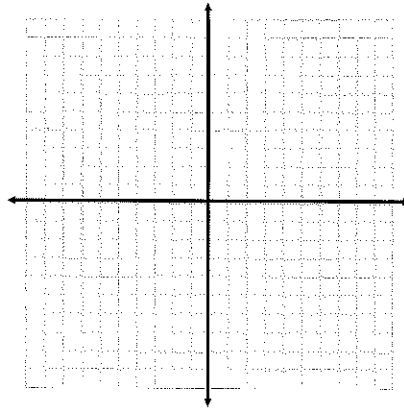
3. $h(x) = (x+3)^2 - 1$ Parent: _____

Transformations: _____



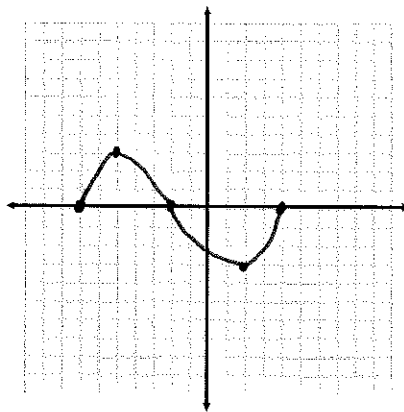
4. $g(x) = -2(x+1)^2 + 3$ Parent: _____

Transformations: _____



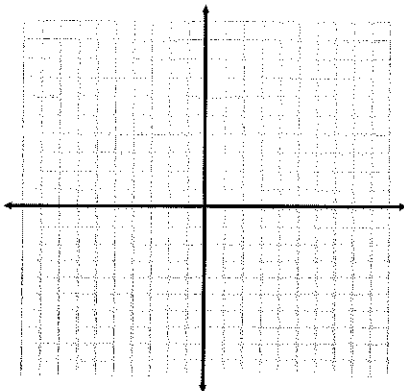
5. $y = \frac{1}{2}g(x - 2) + 3$ Parent: _____

Transformations: _____



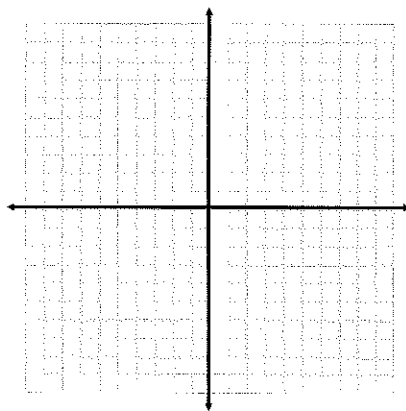
6. $f(x) = 2\sqrt{x - 2} + 1$ Parent: _____

Transformations: _____



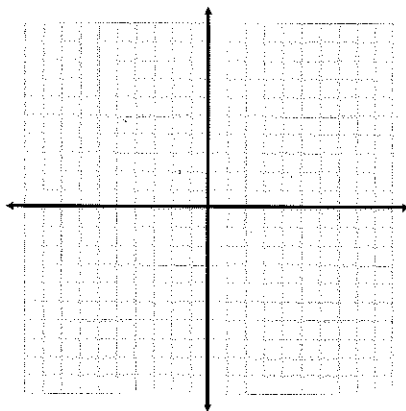
7. $h(x) = 4x$ Parent: _____

Transformations: _____



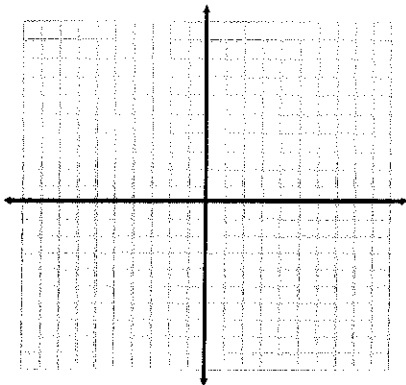
8. $h(x) = -x^2 + 1$ Parent: _____

Transformations: _____



9. $h(x) = -|x - 2|$ Parent: _____

Transformations: _____



For problems 10 – 12, given the parent function and a description of the transformation, write the equation of the transformed function, $f(x)$.

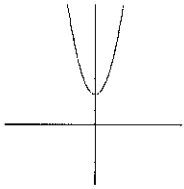
10. Absolute value—vertical shift up 5, horizontal shift right 3. _____

11. Linear—vertical stretch/compression by $\frac{2}{5}$ _____

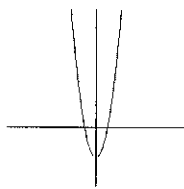
12. Quadratic—vertical stretch by 5, horizontal shift left 8. _____

13. Which graph best represents the function $f(x) = 2x^2 - 2$?

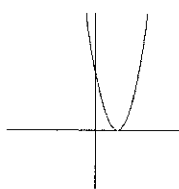
a.



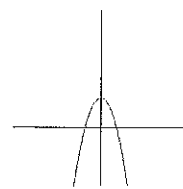
b.



c.

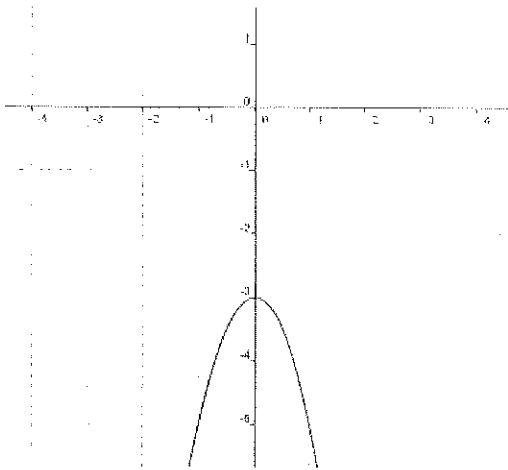


d.



For 1 and 6 state the parent function then describe the transformation.

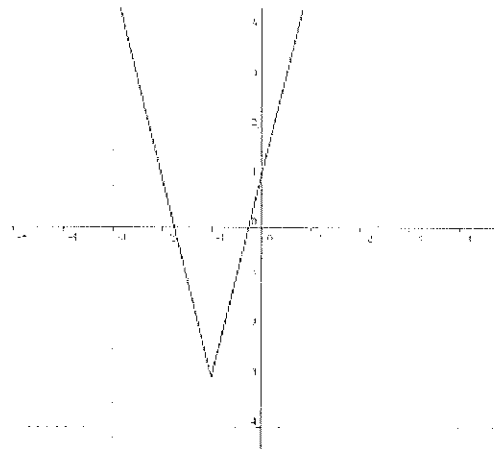
1.



Parent Function:

Transformations: What happened to the parent function?

6.

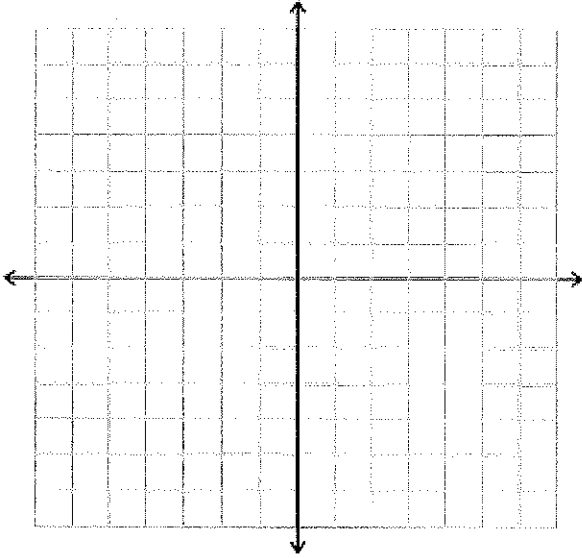


Parent Function:

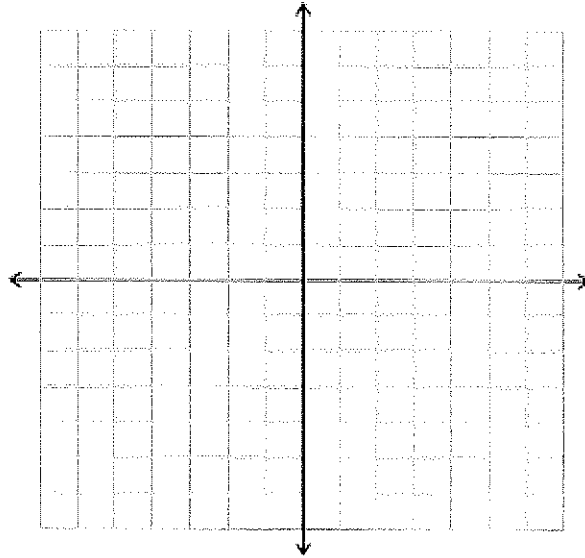
Transformations: What happened to the parent function?

Use the parent function and what we know about the family of functions to sketch a graph of the following functions:

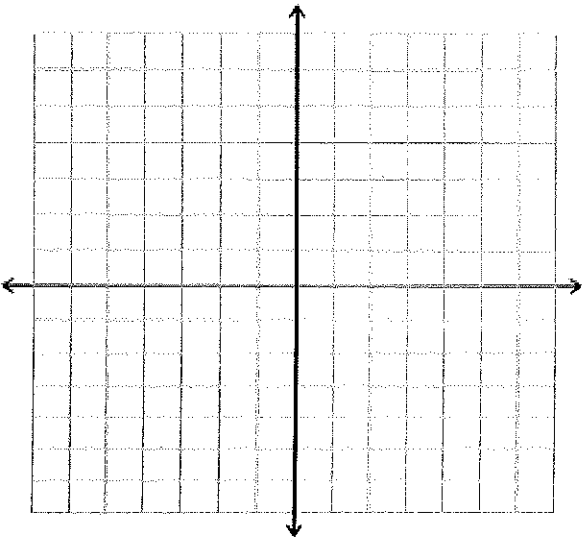
1. $f(x) = (x+2)^2 + 3$



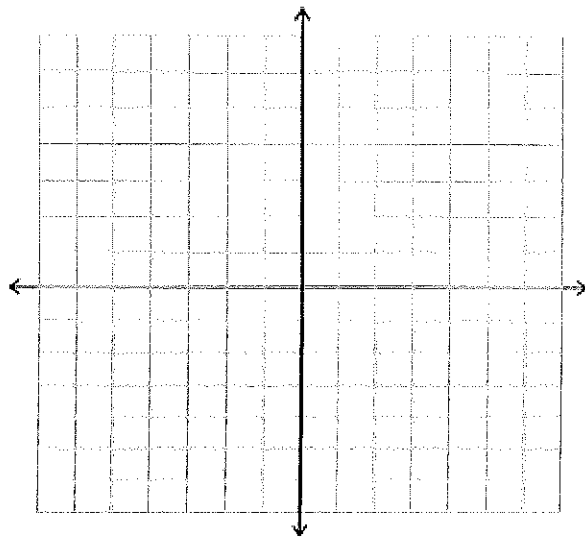
2. $f(x) = \frac{1}{2}\sqrt{x-1} + 3$



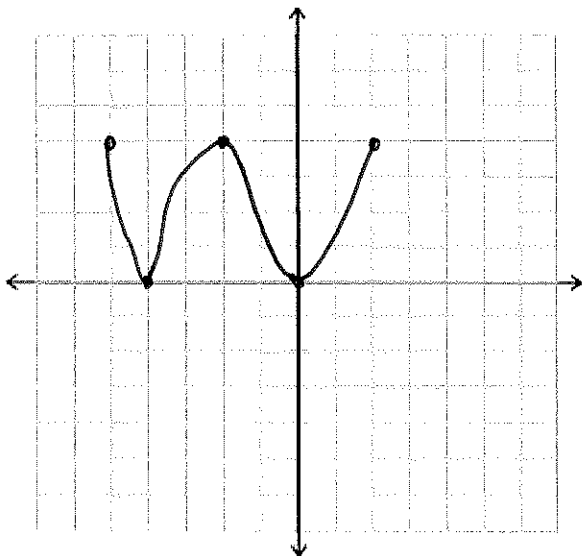
3. $h(x) = -(x-1)^2$



4. $y = \sqrt{x-2}$



5. $y = -h(x - 1) - 1$



6. $y = 3g(x + 2)$

