Algebra II: Translations on Parent Functions Review

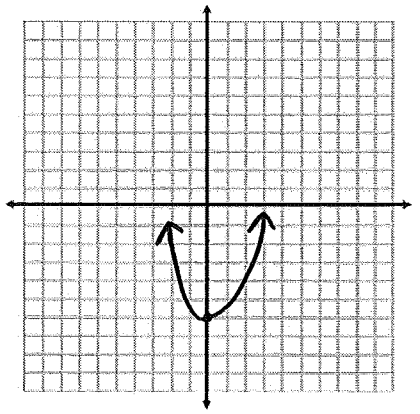
Name Key Period _____ Date _____

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. $g(x) = x^2 - 6$

Parent: quadratic

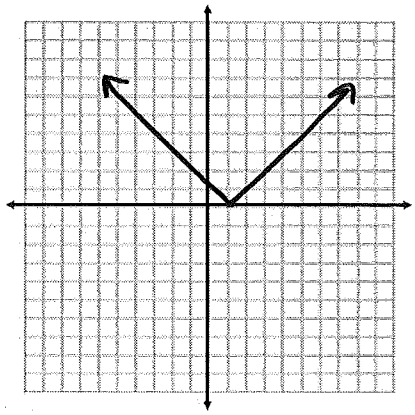
Transformations: down 6



2. $f(x) = |x-1|$

Parent: absolute value

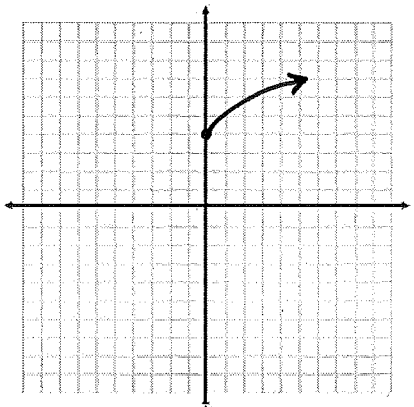
Transformations: right 1



3. $h(x) = \sqrt{x}+4$

Parent: square root

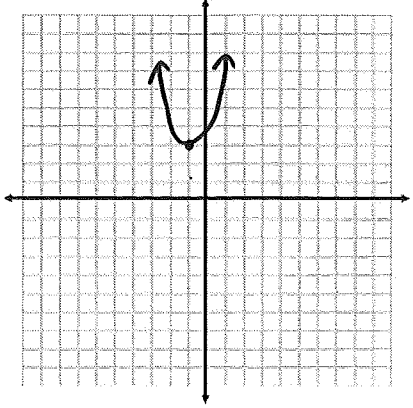
Transformations: up 4



4. $g(x) = (x+1)^2 + 3$

Parent: quadratic

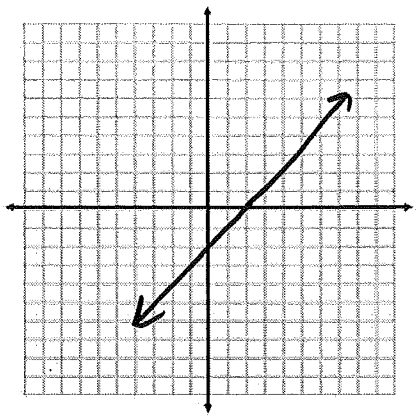
Transformations: left 1, up 3



5. g(x) = $x-2$

Parent: linear

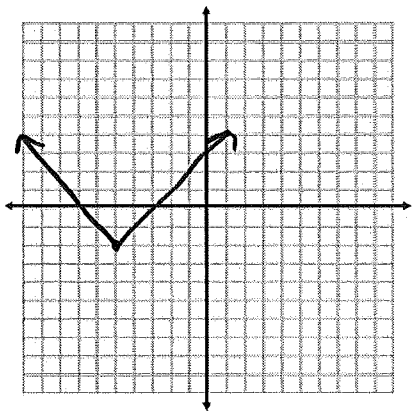
Transformations: right 2



6. f(x) = $|x+5|$ - 2

Parent: absolute value

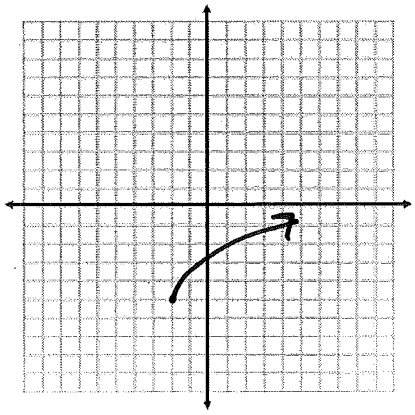
Transformations: left 5, down 2



7. h(x) = $\sqrt{x+2}-5$

Parent: square root

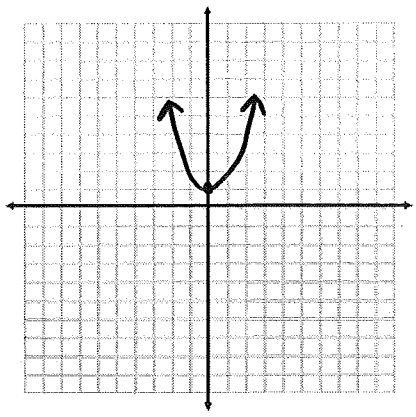
Transformations: left 2, down 5



8. h(x) = x^2 + 1

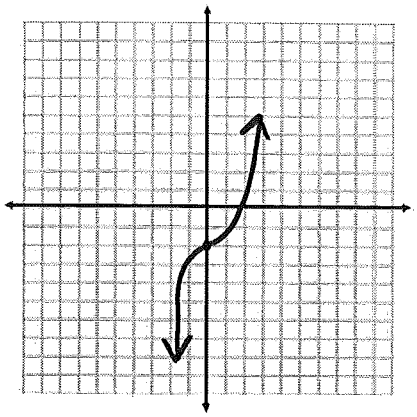
Parent: quadratic

Transformations: up 1



9. h(x) = $x^3 - 2$ Parent: cubic

Transformations: down 2



For problems 10 – 14, given the parent function and a description of the transformation, write the equation of the transformed function, f(x).

10. Absolute value—vertical shift down 5, horizontal shift right 3. $f(x) = |x-3| - 5$

11. Linear—vertical shift up 5. $f(x) = x + 5$

12. Square Root —vertical shift down 2, horizontal shift left 7. $f(x) = \sqrt{x+7} - 2$

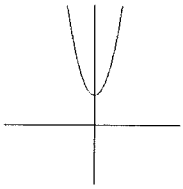
13. Quadratic— horizontal shift left 8. $f(x) = (x+8)^2$

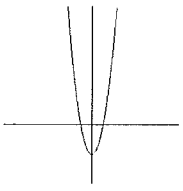
14. Quadratic—vertex at (-5, -2). $f(x) = (x+5)^2 - 2$

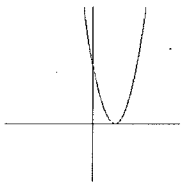
For problems 15 & 16, circle the graph that best represents the given function.

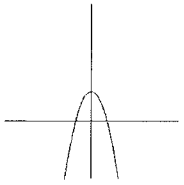
15. f(x) = x^2 - 2?

a. (b.) down 2 c. d.



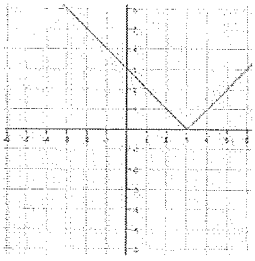




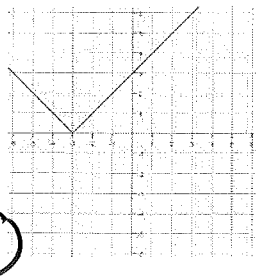


16. g(x) = |x+3|? left 3

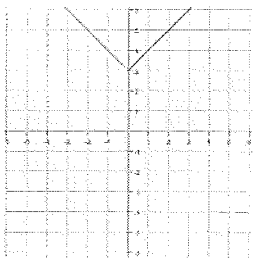
a.



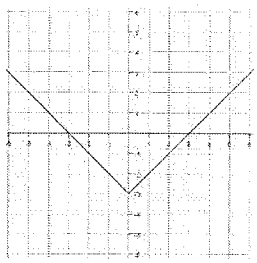
(b.)



c.

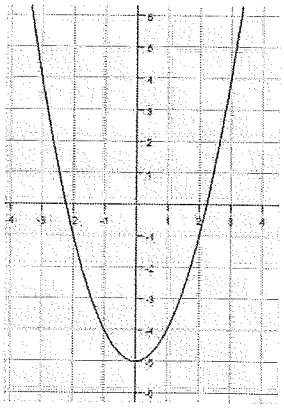


d.

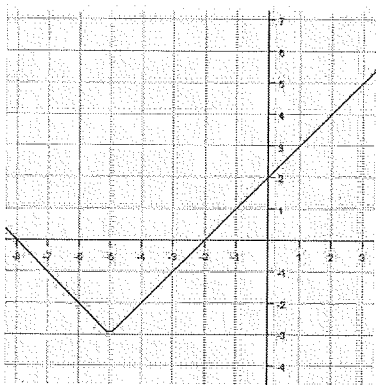


Write the equation for the following translations of their particular parent graphs. You may use y= or function notation (the f(x) type notation).

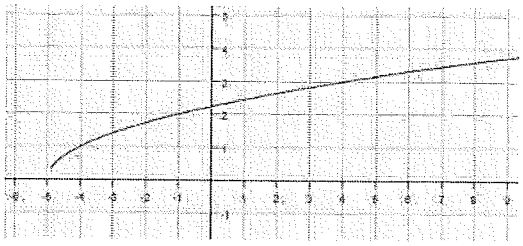
17. $f(x) = x^2 - 5$



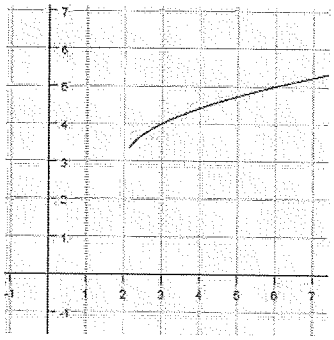
18. $f(x) = |x+5| - 3$



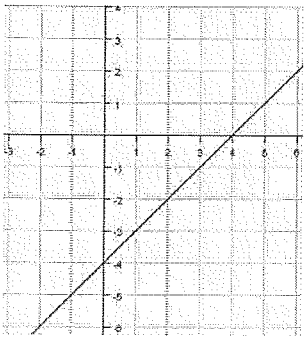
19. $f(x) = \sqrt{x+5}$



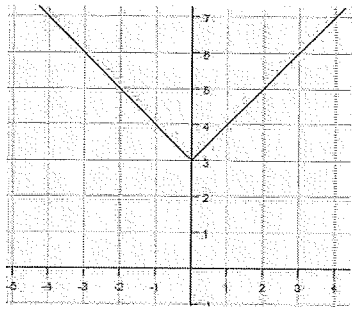
20. $f(x) = \sqrt{x-2} + 3$



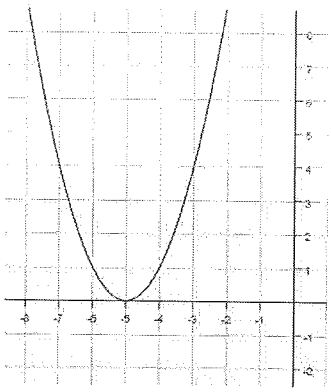
21. $f(x) = x - 4$



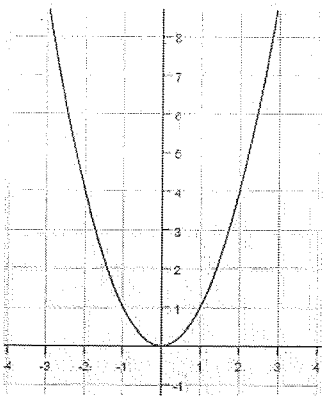
22. $f(x) = |x| + 3$



23. $f(x) = (x+5)^2$



24. $f(x) = x^2$



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