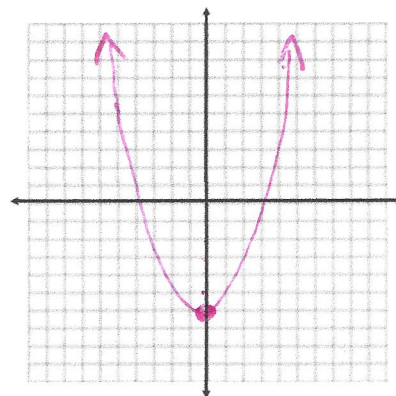# Algebra II: Translations on Parent Functions Review

Name _____ 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.
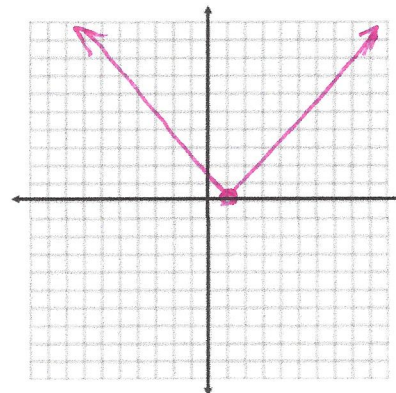
1. $g(x) = x^2 - 6$

   Parent: _quadratic_

   Transformations: _down 6_
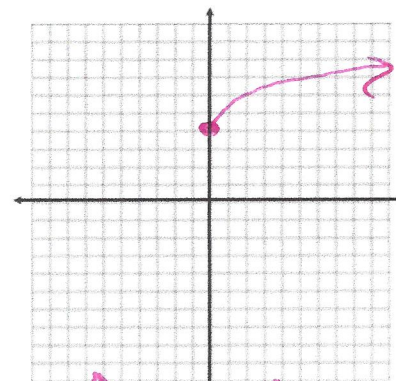
2. $f(x) = |x-1|$

   Parent: _absolute value_

   Transformations: _right 1_

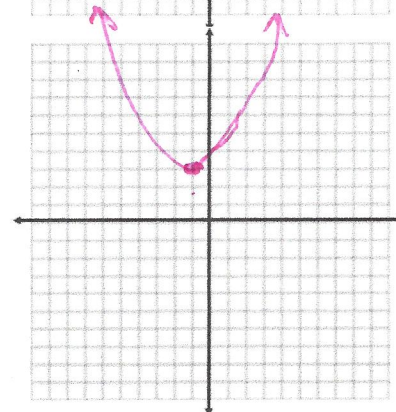3. $h(x) = \sqrt{x} + 4$

   Parent: _square root_

   Transformations: _up 4_
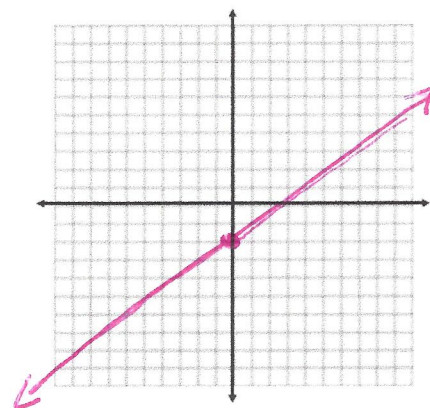
4. $g(x) = (x+1)^2 + 3$

   Parent: _quadratic_

   Transformations: _left 1_

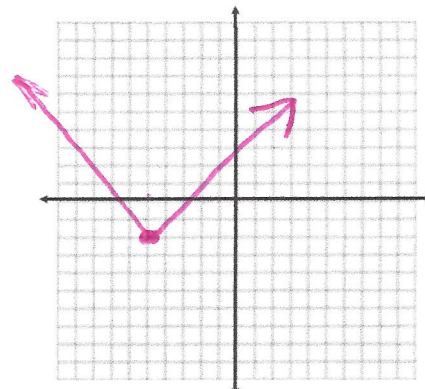   _up 3_

5. $g(x) = x - 2$ Parent: _linear_

Transformations: _down 2_

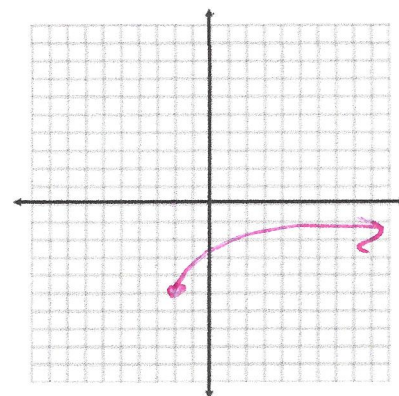**6.** $f(x) = |x + 5| - 2$ Parent: _absolute value_

Transformations: _left 5_

down 2

7. $h(x) = \sqrt{x + 2} - 5$ Parent: _Square root_
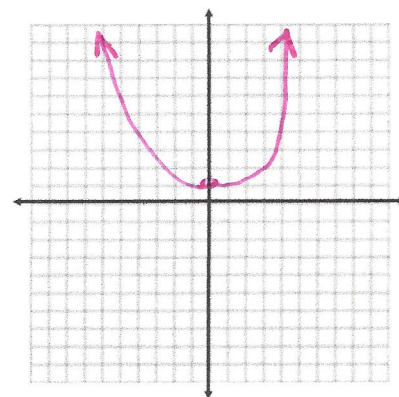
Transformations: _left 2_

down 5

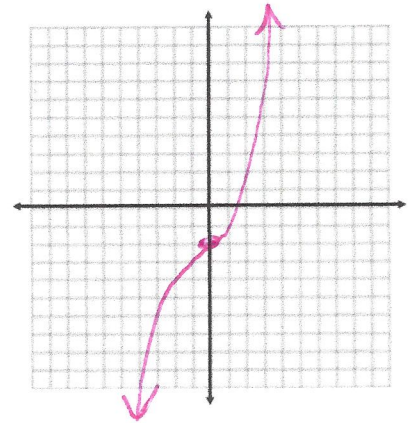**8.** $h(x) = x^2 + 1$ Parent: _quadratic_

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. $g(x) = |x-3| - 5$

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

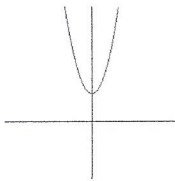12. Square Root —vertical shift down 2, horizontal shift left 7. $g(x) = \sqrt{x+7} - 2$

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

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

For problems 15 & 16, circle the graph that best represents the given function.
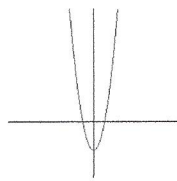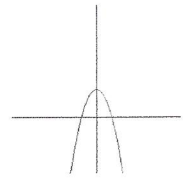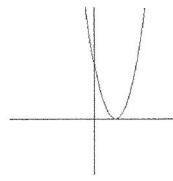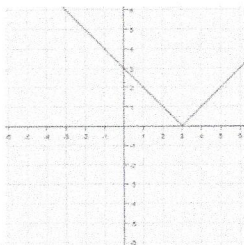
15. $f(x) = x^2 - 2$?
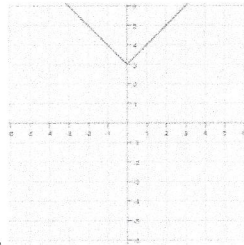
a.   **b.**   c.   d.

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

a.   **b.**   c.   d.

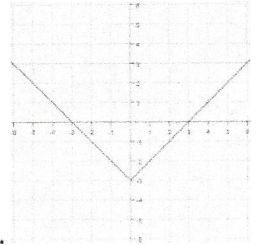Page | 3
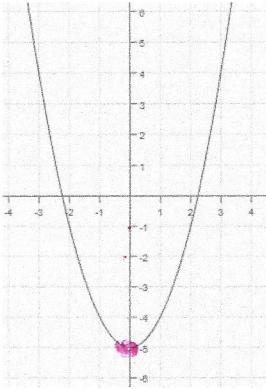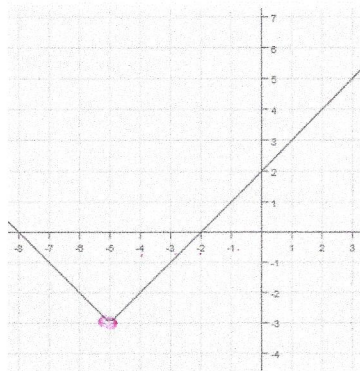
Write the equation for the following translations of their particular parent graphs. You may use y= or function notation (the f(x) type notation).
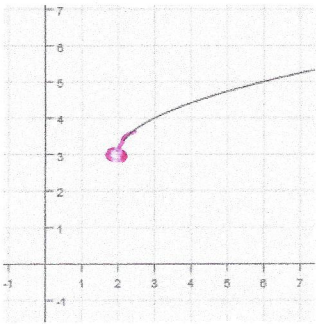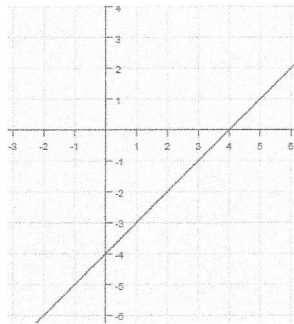
17. $y = x^2 - 5$

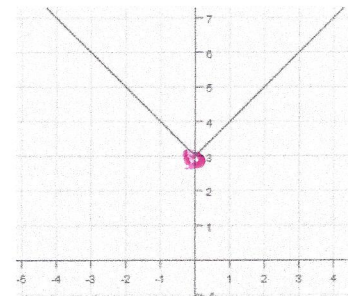18. $y = |x+5| - 3$

19. $y = \sqrt{x+5}$
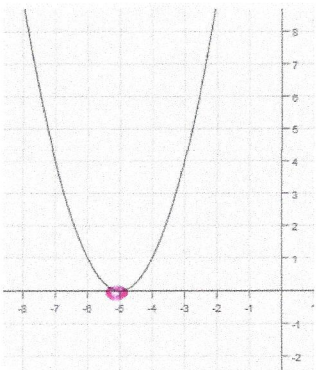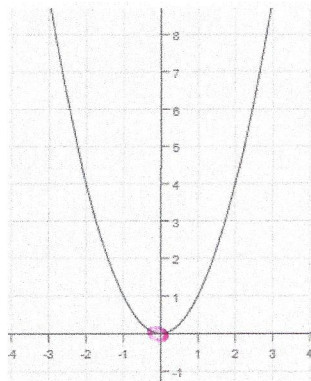
20. $y = \sqrt{x-2} + 3$

21. $y = x - 4$

22. $y = |x| + 4$

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

24. $y = x^2$

25. $y = \sqrt{x+1} - 2$