7.6 Quadratic and Abs. Value Transformations
Pre Cal

Name: Key

Describe *in words* how the parent graph, $f(x)=x^2$, is transformed into g(x).

1. $g(x)=2.8(x+16)^2+10$
   - up 10
   - left 16
   - stretch

2. $g(x)=-\frac{3}{10}(x-11)^2+6$
   - up 6
   - right 11
   - reflected
   - stretch

Describe *in words* how the parent graph, $f(x)=|x|$, is transformed into g(x).

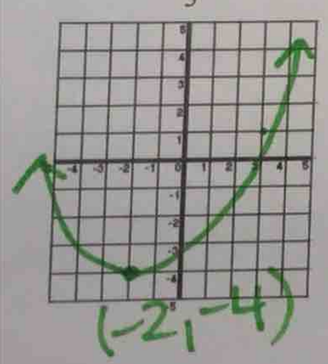
3. $g(x)=7|x+2|-5$
   - down 5
   - left 2
   - stretch

4. $g(x)=-\frac{1}{8}|x-3|+4$
   - up 4
   - right 3
   - reflect
   - stretch

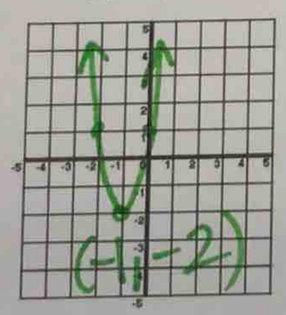
5. $g(x)=-|x+6|+7$
   - up 7
   - left 6
   - reflect

#6-8 Sketch the graph of the function. Label each vertex.

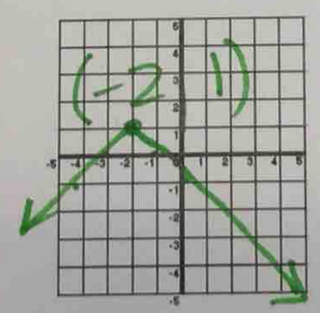
6. $f(x)=\frac{1}{5}(x+2)^2-4$



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



8. $h(x)=-|x+2|+1$



9. Based on the description, write the equation in the form of $y=a\cdot f(x-c)+d$ for the parent graph, $f(x)=|x|$.

   a.) The graph is reflected over the x-axis, widened by a factor of $\frac{1}{2}$, and translated 3 units to the right.

   $y=-\frac{1}{2}|x-3|$

   b.) The graph is narrowed by a factor of 3, translated 4 units to the left, and 8 units down.

   $y=3|x+4|-8$

10. Record the letters in order from narrowest graph to the widest.

    A. $y=-2f(x)$ B. $y=\frac{1}{2}f(x)$ C. $y=5f(x)$ D. $y=\frac{8}{3}f(x)$ E. $y=-\frac{1}{3}f(x)$

    C, D, A, B, E

Describe *in words* how the parent graph, $f(x)=x^2$, is transformed into g(x).

11. $g(x)=\frac{1}{5}(x-1)^2+3$

    The graph is shifted up 3, to the right 1, and widened by a scale factor of 1/5.

12. $g(x)=-7(x-11)^2+2$

    The graph is reflected over the x-axis, shifted up 2 and right 11, and stretche by a factor of

Describe *in words* how the parent graph, $f(x)=|x|$, is transformed into g(x).

13. $g(x)=\frac{1}{2}|x+4|-9$
    - down 9
    - left 4
    - stretched

14. $g(x)=-5|x-3|+4$
    - up 4
    - right 3
    - reflected
    - stretched

15. $g(x)=2|x|-7$
    - down 7
    - stretched