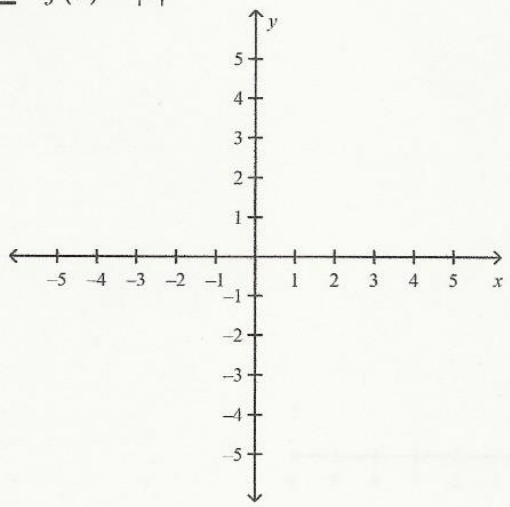
Name: _____ Class: _____ Date: _____ ID: A

Lesson #11 C-2: Understanding Translations and Graphing Absolute Value Functions (Reference: Lesson #107 in book)

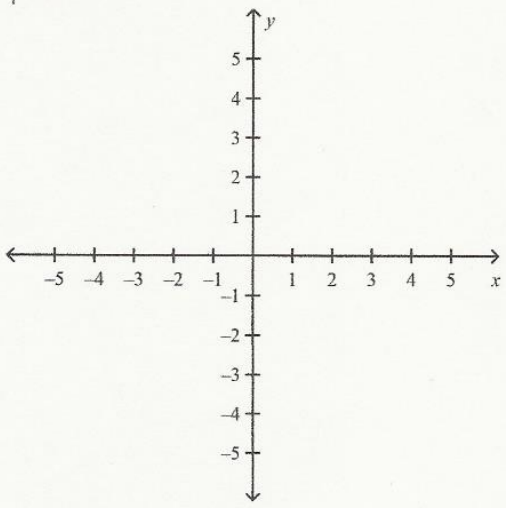
Problem

1. **Graph each of the following absolute value functions with out using a graphing calculator or an X & Y chart, just use what you have learned about shifts and translations to graph them. Then to the right of the graph explain all of the shifts and translation that are going on and what parts of the Algebraic function are controling them. (MAKE SURE YOU GRAPH YOUR 3 CRITICAL POINTS FOR EACH OF THE FOLLOWING FUNCTIONS)**

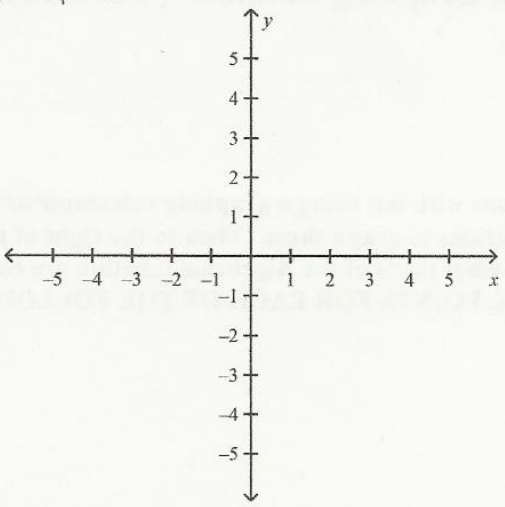
PARENT FUNCTION: $f(x) = |x|$



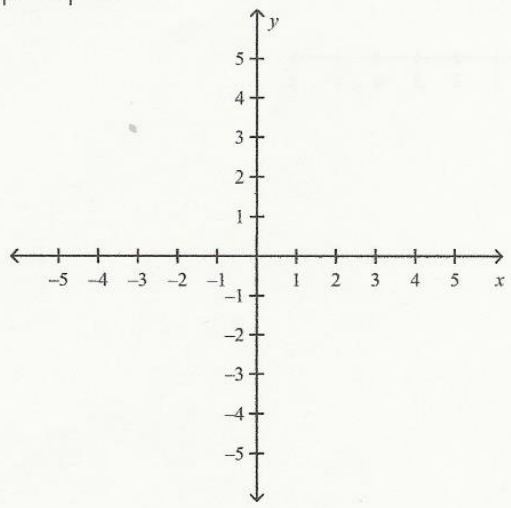
1. $f(x) = |x-3|+2$



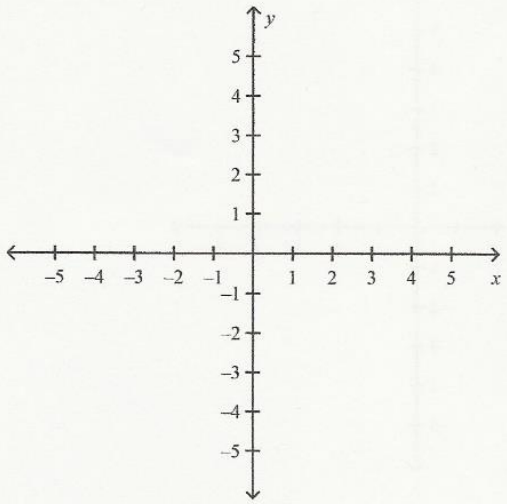
2. $f(x) = 3|x-1|-3$



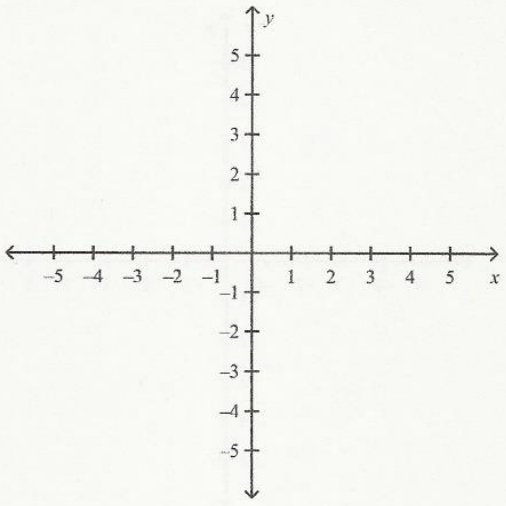
3. $f(x) = -2|x+2|+1$



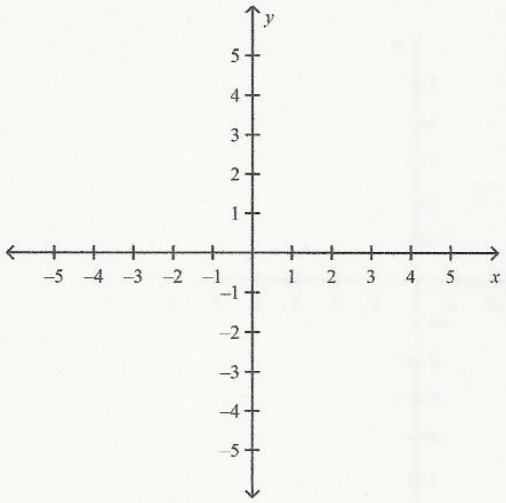
4. $f(x) = \frac{1}{3}|x+3| - 4$



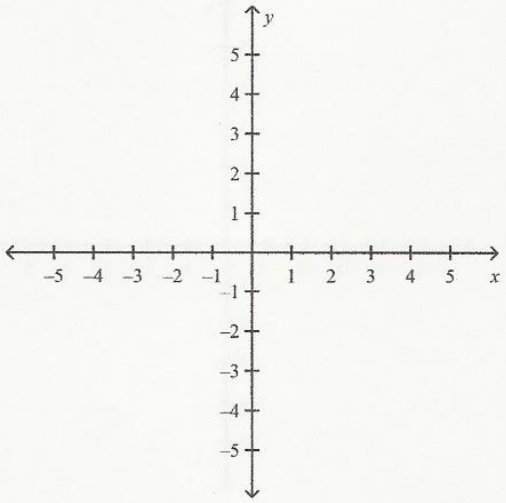
5. $f(x) = |-2x+4+3x-8| + 8 - 10$



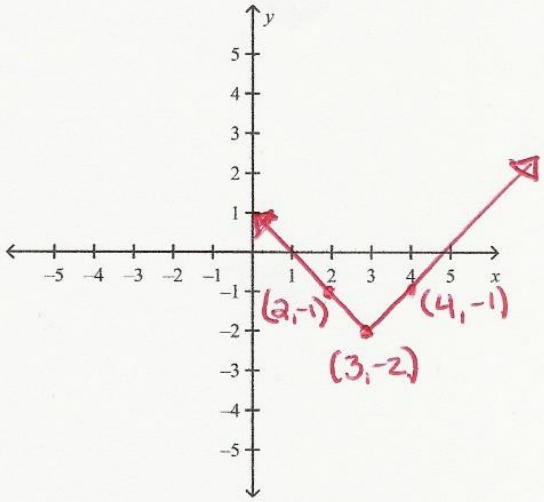
6. $f(x) = 2\left|2(x-2)+3-x\right|+80-76$



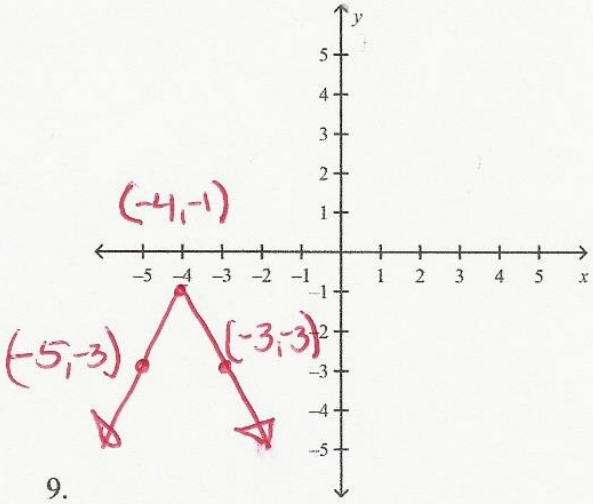
7. $f(x) = -\frac{1}{2}\left|-3(x+2)+4(x+1)\right|-3$



8. **For each of the following graphs, interpret the graphs, determine the shifts that need to have gone on to reach the given graph in comparison to the PARENT FUNCTION and then create the ABSOLUTE VALUE FUNCTION that would model that graph. (SHOW ALL OF YOUR WORK INCLUDING FINAL ABSOLUTE VALUE FUNCTION IN THE OPEN SPACE TO THE RIGHT OF THE GRAPH.) (YOU DO NOT NEED TO EXPLAIN THE SHIFTS IN WORDS IN THESE PROBLEMS.)**



8.



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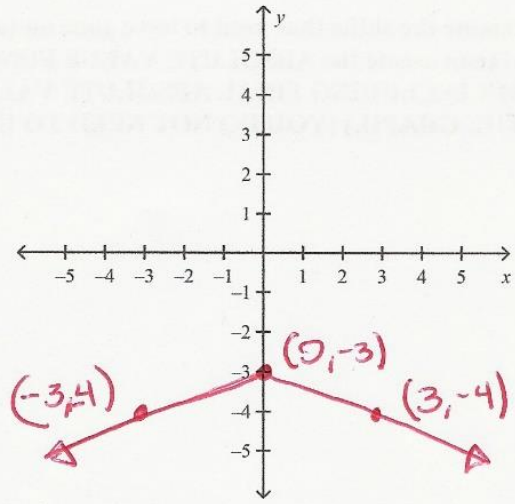
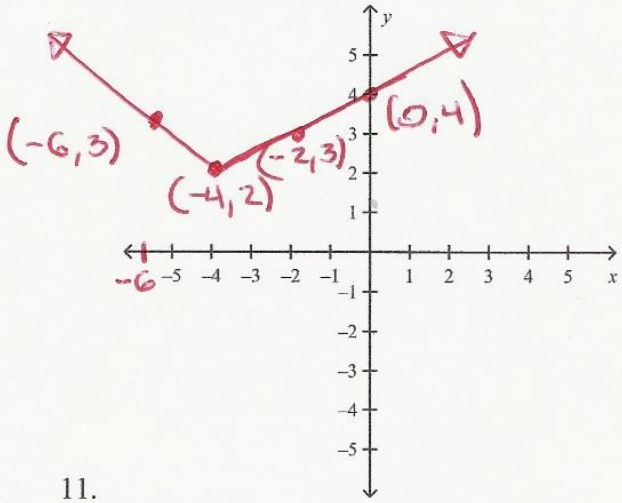


11.



12.