Name: _____ **Unit 3:** Parent Functions & Transformations

Date: _____ **Per:** _____ **Homework 3:** Identifying Transformations & Writing Functions

Give the parent function of each function family.	
1. Linear Functions	**2.** Absolute Value Functions
Describe the transformation of each function compared to its parent function.	
3. $f(x) = \lvert x \rvert - 7$	**4.** $f(x) = \frac{1}{5}\lvert x \rvert$
5. $f(x) = -\lvert x \rvert$	**6.** $f(x) = \lvert x + 6 \rvert$
7. $f(x) = 3\lvert x \rvert$	**8.** $f(x) = \lvert x - 4 \rvert + 6$
9. $f(x) = -\lvert x + 9 \rvert$	**10.** $f(x) = 4\lvert x - 1 \rvert$
11. $f(x) = 2\lvert x + 5 \rvert - 4$	**12.** $f(x) = -\frac{5}{3}\lvert x \rvert + 2$
Transformations to the absolute value parent function are described. Write the new function.	
13. Translated 9 units right.	**14.** Reflected in the x-axis.
15. Vertically compressed by a factor of ¾.	**16.** Shifted 4 units up.
17. Reflected in the x-axis, then translated 2 units left.	**18.** Vertically stretched by a factor of 5, then translated 3 units right.
19. Translated 7 units down and 4 units left.	**20.** Vertically compressed by a factor of ½, then reflected in the x-axis.
21. Vertically stretched by a factor of 4, then shifted 2 units right and 1 unit down.	**22.** Reflected in the x-axis, then translated 8 units left and 5 units up.