

Name _____ Date _____ Period _____

Transformations of $f(x) = |x|$, Part I - Practice

Algebra II Honors | Unit 2 | Lesson 2 Practice | TEK A2.6.C

Objective: I can name the transformation a given form of $a|x|$ or $|bx|$ describes, and use a table of values to decide whether two transformations produce the same graph.

Section 1 — Recall

1. Name the transformation for $f(x) = 6|x|$. Steeper or flatter than the parent?

2. Name the transformation for $f(x) = |7x|$. Steeper or flatter?

3. Name the transformation for $f(x) = (1/5)|x|$.

4. Name the transformation for $f(x) = |(1/4)x|$, including the factor.

Section 2 — Apply

5. Fill in the table for $y = 5|x|$ and $y = |5x|$. Same graph or not?

x	-2	-1	0	1	2
5 x 					
x	-2	-1	0	1	2
 5x 					

Same graph? _____

6. Now fill in the table for $y = -2|x|$ and $y = |-2x|$. Same graph or not?

x	-2	-1	0	1	2
-2 x 					
x	-2	-1	0	1	2
 -2x 					

Same graph? _____

7. Name BOTH effects in $f(x) = -8|x|$, then give the vertex.

_____ Vertex: _____

Section 3 — Challenge

8. Show $f(x) = |-x|$ produces the same graph as $f(x) = |x|$ by EVALUATING both at $x = -3$, 0, and 4.

At $x = -3$: _____ At $x = 0$: _____ At $x = 4$: _____

Why: _____

9. $f(x) = a|x|$ passes through (3, 12). Find a. Then name a DIFFERENT form, using b instead of a, through the same point.

a = _____ b-form: _____

Section 4 — Explain It

10. Questions 5 and 6 both compared a vertical change to a horizontal one, but only question 5 came out the same. Explain what made the difference, using your tables as evidence.
