

Name _____ Date _____ Period _____

Vertex Form and Working Backward - Practice

Algebra II Honors | Unit 2 | Lesson 3 Practice | TEK A2.6.C

Objective: I can read the vertex and every transformation off vertex form, and work backward from a vertex plus one point to write the equation.

Section 1 — Recall

1. In $f(x) = a|x - c| + d$, the vertex is _____ and the graph opens _____ when $a < 0$.

Vertex: _____ Opens: _____

2. Give the vertex of $f(x) = 5|x - 6| + 2$.

3. Give the vertex of $f(x) = -|x + 3| - 7$.

4. List the four working-backward steps in order.

1) _____ 2) _____

3) _____ 4) _____

Section 2 — Apply

5. Give the vertex and ALL transformations of $f(x) = 3|x - 4| - 5$.

Vertex: _____ Opens: _____

Transformations: _____

6. Give the vertex and ALL transformations of $f(x) = -(2/3)|x + 8| + 1$.

Vertex: _____ Opens: _____

Transformations: _____

7. Vertex (2, 3), passes through (5, 12). Write the equation, showing all four steps.

Substitute: _____ Simplify: _____

Solve: $a =$ _____ Equation: _____

Section 3 — Challenge

8. Vertex (-4, 6), passes through (-1, -3). Write the equation, showing all four steps. Watch the double negative inside the bars.

Substitute: _____ Simplify: _____

Solve: $a =$ _____ Equation: _____

9. Dunhill Drafting's roofline is $f(x) = -1.2|x - 3| + 8$. Give the vertex, then explain how you know it is a MAXIMUM without graphing.

Vertex: _____

How you know: _____

Section 4 — Explain It

10. Explain why a vertex ALONE is not enough to determine the equation, but a vertex plus ONE other point is.
