

Name _____ Date _____ Period _____

Graphing $f(x) = |x|$ and Key Attributes - Practice

Algebra II | Unit 2 | Lesson 1 Practice | TEK A2.2.A

Objective: I can graph $f(x) = |x|$ from a table and identify its domain, range, vertex, symmetry, and minimum value.

Section 1 — Recall

1. Evaluate each.

$$|-8| = \underline{\hspace{2cm}} \quad |6| = \underline{\hspace{2cm}} \quad |-2.5| = \underline{\hspace{2cm}} \quad f(-10) = \underline{\hspace{2cm}}$$

2. Complete the table for $f(x) = |x|$.

x	-3	-2	-1	0	1	2	3
f(x)							

3. State the domain, range, and vertex of $f(x) = |x|$.

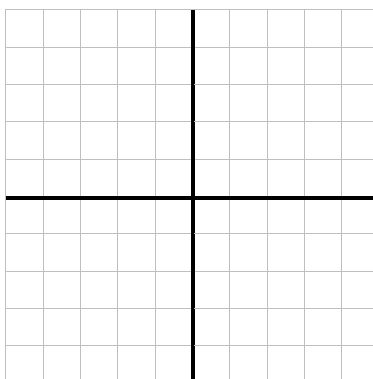
Domain: _____ Range: _____ Vertex: _____

4. Fill in each blank for $f(x) = |x|$.

Symmetric about the _____ Minimum value: _____ Maximum value: _____

Section 2 — Apply

5. Graph $f(x) = |x|$ using your table from question 2. Each square is 1 unit; both axes run -5 to 5.



6. A hiking trail runs both directions from a trailhead at position 0. A hiker's distance from the trailhead is $d(x) = |x|$ miles.

Distance at $x = -4.5$: _____ Distance at $x = 9$: _____

7. Which of these points lie on the graph of $f(x) = |x|$? Circle yes or no for each, and give a reason for any "no."

$(-5, 5)$: _____ $(3, -3)$: _____

$(0, 0)$: _____ $(2, 2)$: _____

Section 3 — Challenge

8. Solve $|x| = 7$. Then explain why $|x| = -7$ has no solution.

$x = \underline{\hspace{2cm}}$ or $x = \underline{\hspace{2cm}}$

Why $|x| = -7$ has no solution:

9. Name one attribute $f(x) = |x|$ and $y = x$ SHARE, and one attribute where they DIFFER.

Share: _____

Differ: _____

Section 4 — Explain It

10. Explain why the graph of $f(x) = |x|$ is symmetric about the y-axis but is NOT symmetric about the x-axis.
