

Name \_\_\_\_\_ Date \_\_\_\_\_ Period \_\_\_\_\_

## Solving Absolute Value Linear Inequalities - Practice

Algebra II | Unit 2 | Lesson 7 Practice | TEK A2.6.F

**Objective:** I can decide AND vs. OR from the inequality symbol, solve using the sandwich and split methods, and graph the solution on a number line.

### Section 1 — Recall

1. Fill in each blank with AND or OR.

$|A| < k$  gives an \_\_\_\_\_ statement.  $|A| > k$  gives an \_\_\_\_\_ statement.

2. Solve  $|x| < 6$ .

\_\_\_\_\_

3. Solve  $|x| \geq 4$ .

\_\_\_\_\_

4. Solve  $|x + 1| \leq 5$  using the sandwich method. Show the sandwich, then the solution.

Sandwich: \_\_\_\_\_

Solution: \_\_\_\_\_

### Section 2 — Apply

5. Solve  $|2x - 1| < 7$  TWO ways, then graph the solution.

Sandwich method: \_\_\_\_\_

Split method: \_\_\_\_\_

Graph the solution:

|    |    |    |    |    |    |   |   |   |   |   |   |   |
|----|----|----|----|----|----|---|---|---|---|---|---|---|
| -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
|----|----|----|----|----|----|---|---|---|---|---|---|---|

6. Solve  $2|x + 4| > 10$ .

Isolate: \_\_\_\_\_ Solution: \_\_\_\_\_

7. Solve  $3|x - 2| + 1 \leq 13$ .

Isolate: \_\_\_\_\_ Solution: \_\_\_\_\_

### Section 3 — Challenge

8. Solve  $4|3x + 2| - 6 \geq 18$ . The endpoints will NOT be integers.

Isolate: \_\_\_\_\_

Solution: \_\_\_\_\_

9. Is  $x = 0$  a solution to  $|x - 3| > 5$ ? Show the check and explain.

Check: \_\_\_\_\_

So  $x = 0$  is \_\_\_\_\_

#### Section 4 — Explain It

**10.** Using the idea that  $|x|$  means distance from 0, explain why  $<$  produces an "and" but  $>$  produces an "or."

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