NAME _____

Module 6 Solving Absolute Value Equations and Inequalities

Lesson 2 Solving Advanced Absolute Value Equations

guided notes

Lesson Objectives

- Solve absolute value equations in which the absolute value expression is isolated in one step.
- Solve absolute value equations in which the absolute value expression is isolated in two steps.

The solutions to the equation $|x| = a$ are $x =$ ***a*** and $x =$ ***–a***, if a is nonnegative.

To rewrite an absolute value equation as a disjunction, we need to ***isolate*** the absolute value expression.

1 Solve:

$2 = |n| + 3$

$|n| = -1$ **no solution**

Solution Set: $\varnothing$

2 Solve:

$-3|a| = 12$

$|a| = -4$ **no solution**

Solution Set: $\varnothing$

3 Solve:

$4 + |n - 5| = 4$

$n = 5$

Solution Set: {5}

4 Solve:

$2|x + 7| + 2 = 4$

$x = -6$ or $x = -8$

Solution Set: {–8, –6}