

UNIT 2 – DAY 4 NOTES
LET'S BREAK IT DOWN



STEP 1:

Isolate the Absolute Value

$$-2|2x + 1| + 3 = 15$$

$$\frac{-3 - 3}{-2}$$

STEP 2:

Isolate Again!

$$\frac{-2|2x + 1| = 12}{-2 \quad -2}$$

STEP 3:

When the absolute value is alone, you split it now!

$$|2x + 1| = -6$$

$$\oplus \quad \swarrow$$

$$\ominus \quad \searrow$$

$$\frac{2x + 1 = -6}{-1 \quad -1}$$

$$\frac{2x + 1 = 6}{-1 \quad -1}$$

STEP 4:

Solve two mini-equations.

$$\frac{2x = -7}{2 \quad 2}$$

$$\frac{2x = 5}{2 \quad 2}$$

$$x = -3.5$$

$$x = 2.5$$

STEP 5:

Check your answer.

$$|2x + 1| = -6$$

$$|2x + 1| = -6$$

$$|2(-3.5) + 1| = -6$$

$$|2(2.5) + 1| = -6$$

$$|-7 + 1| = -6$$

$$|5 + 1| = -6$$

$$|-6| = -6$$

$$|6| = 6$$

$$6 = -6$$

$$6 = 6$$

STEP 6:

Final Answer.

NO SOLUTION

NOPE

NOPE

NOW YOU TRY ON YOUR OWN. DO YOU REMEMBER THE STEPS?!

STEP 1: Isolate the Absolute Value

$$4|2x - 2| + 5 = 21$$

$-5 \quad -5$

STEP 2: Isolate Again!

$$\frac{4|2x-2|}{4} = \frac{16}{4}$$

STEP 3: When the absolute value is alone, you split it now!

$$|2x-2|=4$$

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$$2x-2=4 \qquad 2x-2=-4$$

STEP 4: Solve two mini-equations.

$$2x=6 \qquad 2x=-2$$

$$x=3 \qquad x=-1$$

STEP 5: Check your answer.

x=3 x=-1

$$|2x-2|=4$$

$$|2(3)-2|=4$$

$$|4|=4$$

$$4=4 \checkmark$$

$$|2x-2|=4$$

$$|2 \cdot (-1) - 2|=4$$

$$|-4|=4$$

$$4=4 \checkmark$$

STEP 6: Final Answer.

KEEP GOING ☺ THIS ONE HAS ONE LESS STEP... WHY???

STEP 1: Isolate the Absolute Value

$$|2x + 6| = x$$

STEP 2: When the absolute value is alone, you split it now!

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$$2x+6=x \qquad 2x+6=-x$$

STEP 3: Solve two mini-equations.

$$6 = -x \qquad 6 = -3x$$

$$x = -6 \qquad x = -2$$

STEP 4: Check your answer.

$$|2(-6)+6| = -6$$

$$|-12+6| = -6$$

$$|-6| = -6$$

$$6 \neq -6$$

$$|2(-2)+6| = -2$$

$$|-4+6| = -2$$

$$|2| = -2$$

$$2 \neq -2$$

STEP 5: Final Answer.

NO SOLUTION!