

NOTES: ABSOLUTE VALUE EQUATIONS

DAY 6

(with extraneous solutions)

Textbook Chapter 1.7

OBJECTIVE: Today you will learn about extraneous solutions
AND how to solve absolute value inequalities!

1. $|3x + 1| - 5 = -3$

2. $|2x + 12| = 4x$

3. $|x + 3| = 8$

4. $-2|x + 7| = -14$

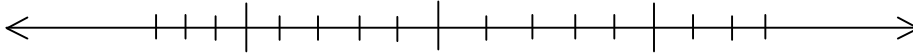
5. Interpret $|2x + 3| = -7$

NOTES: ABSOLUTE VALUE INEQUALITIES (AND)

Textbook Chapter 1.7

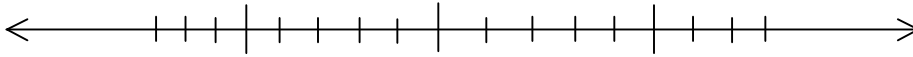
Example 1: $|x| \leq 3$

- What values will satisfy the inequality?
- Graph.



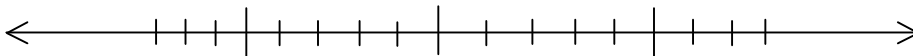
- Write a **COMPOUND** inequality that is equivalent to $|x| \leq 3$: _____

Example 2: My credit card balance ranges from $-\$300$ to $\$300$ at any given time.

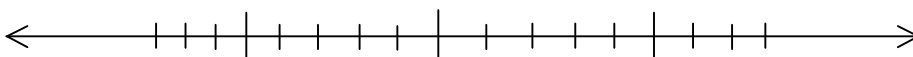


- Write this situation as a **COMPOUND** inequality: _____
- How can you write this inequality as an absolute value? _____

Example 3: $|x + 1| \leq 3$



Example 4: $|2x + 4| \leq 12$



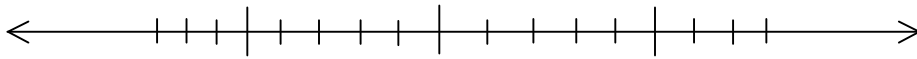
NOTES: ABSOLUTE VALUE INEQUALITIES (OR)

DAY 6

Textbook Chapter 1.7

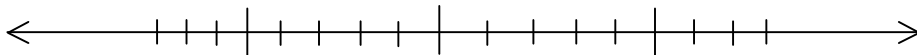
Example 4: $|x| \geq 5$

- What values will satisfy the inequality?
- Solve and graph.

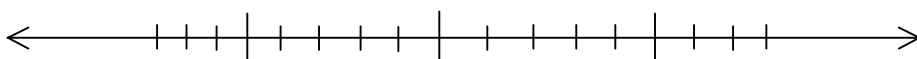


- Write a **DISJOINT** inequality that is equivalent to $|x| \geq 5$: _____

Example 5: $|x + 1| > 2$



Example 6: $|2x + 4| + 2 \geq 12$



COMPARE (in as many ways as possible): $|x| < 3$ and $|x| \geq 3$

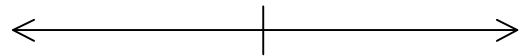
PRACTICE: ABSOLUTE VALUE EQUATIONS AND INEQUALITIES

Solve and graph.

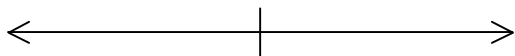
1. $|x - 3| = 12$



2. $2|y + 7| + 13 = 15$



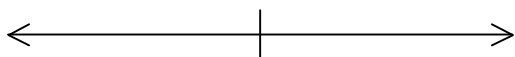
3. $|5x + 2| \leq 3$



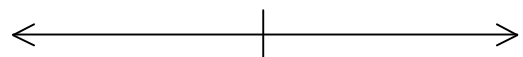
4. $|3y + 4| > 8$



5. $2|m + 5| + 10 \leq 16$



6. $\left| \frac{x}{5} + 3 \right| > 2$



HOMEWORK: ABS VAL INEQUALITIES



NAME: _____ TARGET SCORE: ____/10 DAY 6

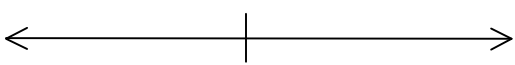
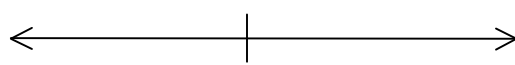
Spiral review for everyone...1 point each

1. Solve. $2 < -x + 3 < 8$	2. Simplify: $5 - 1(6 + 2)$
3. Solve. $\left \frac{1}{2}x - 2\right = 14$	4. Solve. $\frac{2}{3}x = 10$

Solve.

5. $ 3x - 4 = x$ (1 point)	7. $ 4x + 10 = 6x$ (2 points)
6. $ 4x + 2 \geq 7$ (1 point)	

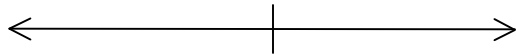
Solve and Graph.

8. $ x + 4 < 7$ (1 point)	9. $ 11 - 3x \geq 2$ (2 points)
	

Solve and Graph.

11. $|x + 5| > 6$

(1 point)

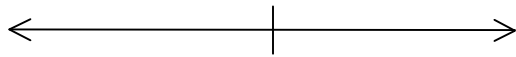


13. $|-3x| < 9$

(2 points)

12. $\frac{3x}{4} < 12$

(1 point)



Reach for the stars...3 points each

14. Solve and Graph.

$4 < 2|3x + 1| - 10$

