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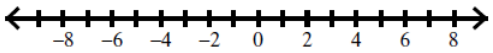
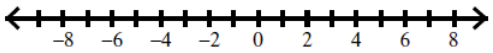
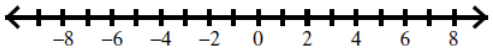
5.04 Honors Segment Two Activity Part A

Absolute Value Inequalities

Topics	Space to practice & Video Links
Absolute Value: _____a number is away from zero. Example: Graph |x| = 3  	5.04Video1
Less Than Absolute Value Inequalities If the absolute value inequality contains a _____ _____symbol (_____, _____): Write two separate _____to solve. 1. Drop the absolute value bars. 2. Create a second inequality: _____ the inequality symbol, _____ value, and the word _____ in between. The graph is _____ two numbers.	5.04Video2 Example: |x| < 2 
Practice #1: Graph the solution to |x| < 3  	5.04Video3

Greater Than Absolute Value Inequalities

If the absolute value inequality contains a _____ _____symbol (_____,_____):

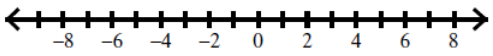
Write two separate inequalities to solve.

1. Drop the absolute value bars.
2. Create a second inequality: _____the inequality symbol, _____value, and the word _____ in between.

The graph has _____ _____ in _____ directions.

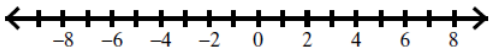
5.04Video4

Example: $|x| \geq 6$



Practice #2

Graph the solution to $|x| > 3$



5.04Video5

Solving Absolute Value Inequalities

STEPS:

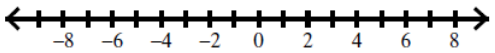
1. _____ the absolute value expression on the _____ side of the inequality.
2. _____ or _____ uses AND. _____ or _____ uses OR.
3. Create the first inequality by dropping the absolute value bars.
4. Create the second inequality:
    a. _____ the first inequality

5.04Video6

b. Flip the _____ symbol.
c. Change the _____ of the _____ on the right side of the inequality.
d. Insert the word _____ or _____ between the two inequalities.

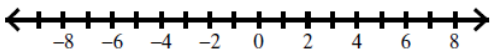
Example 1:

Solve $|2x + 1| \leq 5$

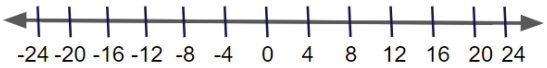


Example 2:

Solve $|3x + 2| > 5$



5.04Video7

Example 3: Solve $\left\|\frac{1}{2}x + 2\right\| - 3 > 5$  	5.04Video8
Writing Absolute Value Inequalities	5.04Video9 Example: For a swimming pool to be clean and safe, the pH level of the water should be within 0.2 of 7.6. Write and solve an absolute value inequality that describes the acceptable pH readings for pools.
Practice #3: At a technology company, the average starting salary for a new software engineer is $58,736, but the actual salary varies as much as $3,375. Write and solve an absolute value inequality to determine the range for the starting salary.	5.04Video10

- **Want More Practice?**

Topic	
Solving Absolute Value Inequalities	Try It
Graphing Absolute Value Inequalities	Try It