Notes for R.2 Order and Absolute Value (pp. 16 – 21)

Name: _____
Date: _____
Instructor: _____

Topics: Order on the Number Line, Absolute Value and the Properties of Absolute Value

I. Order of a List of Numbers on the Number Line (pp.16 – 17)

1. If *a* is to the *left* of the value *b*, then we use the symbol notation _____.
2. If *a* is to the *right* of the value *b*, then we use the symbol notation _____.

Ex. Write the order from smallest to largest: $0, -4, \frac{3}{4}, \frac{-5}{2}, 6, \sqrt{11}, -3$

II. Complete the chart below.

Symbol	Meaning (Reading from left to right)
$\leq$	
$\geq$	
	Is not less than
	Is not greater than
$a < b < c$	b is _____
$a < b$ and $b < c$	a is _____ and b is _____

III. Absolute Value (pp. 17 – 19)
Absolute value tells the _____ from 0 and is written as _____.
If *a* is a real number, then the algebraic definition of absolute value of *a* states:

$$|a| = \begin{cases} a \text{ if } a \geq 0 \\ -a \text{ if } a < 0 \end{cases}$$

Ex. $|-19| =$

Ex. $|14| =$

Ex. $-|-3| =$

Ex. Write without absolute value bars: $|5x - 15|, \text{ if } x < 3 =$

IV. Properties of absolute value (pp. 19 – 21)

1. $|a| \geq 0$
2. $|-a| = |a|$
3. $|a| \cdot |b| =$ _____
4. $\frac{|a|}{|b|} =$ _____
5. $|a + b| \leq$ _____ (The Triangle Property of an Inequality)

Ex. Show how the Triangle Inequality Property applies when a = -1 and b = -4.

Ex. Evaluate $\frac{5|xy|}{3|x| - 2|y|}$ when x = -4 and y = -2.

V. Distance between two points (p. 21)

The distance between two points is the _____
_____

Ex. Find the distance between 4 and –6.

Assignments:
Text: pp.22 –24 #1, 3, 9, 11, 19, 23, 25, 33, 51 – 57 odd

"Review of Algebra" p. 7 #17, 23 – 47 odd