

Chapter 3 Notes Algebra 1

name _____ per _____

(3-1)	INEQUALITIES/	: any number that can make an inequality true.			
	GRAPHS	$x < 4$:	$x \leq 13$:	$x \geq -6$:	$x > -9$:

Vocabulary:	" x is 8"
	<i>less than</i> <i>greater than</i>
	<i>less than or equal to</i> <i>greater than or equal to</i>
	<i>no more than</i> <i>no less than</i> <i>at most</i> <i>at least</i>
	<i>Maximum</i>

IDENTIFY SOLUTION	EX 2:
BY EVALUTATION:	Is each of the numbers a solution for $8 + 7x \geq -13$
1.) plug in a value using () to determine if it's a solution	a.) b.)

GRAPHING INEQUALITIES	EX 4: Represent ALL possible solutions!!!
Reading graphs:	Open circle: Closed circle:

Making a graph	a.) $x \geq -3$
1.) Draw line a straight edge	
2.) Write the answer in the center	
3.) Write 2 #'s on both sides to create an accurate #line.	b.) $\frac{1}{2} > y$
4.) Use open/closed circle and draw an arrow indicating the other possible solutions.	c.) $x \leq -3$
	d.) $-5 < x$

Write an inequality from a graph:	
1.) Pick a variable	a.) b.)
2.) choose correct sign for the dot	
3.) Use the number below the dot	

Multiplication/Division

RULE!!!!

Inequality	√ algebra (use =)	√ inequality	Graph
a.)			
b.)			
c.)			

APPLICATION

EX 3: We want to buy food for a food bank. A case of sauce costs \$13.75. What is the greatest number of cases the student council can buy if they use at most \$216?

EX 3: Inequality	√ algebra (use =)	√ inequality	Graph

APPLICATION

EX 4: Students in the school band are selling calendars. They earn \$.40 on each calendar they sell. Their goal is to earn more than \$327. Write and solve an inequality to find the fewest number of calendars they can sell and still reach their goal?

EX 4: Inequality	√ algebra (use =)	√ inequality	Graph

EX 5:			

(3-5)	COMPOUND INEQUALITIES	: 2 inequalities that are joined by the word AND or the word OR create a compound inequality
	“OR”	EX 4: Graph and write an inequality for all real numbers that are less than -3 <u>or</u> greater than 7.
	Any number that makes either inequality “true”	
	1.) write 2 inequalities with “or”	
	2.) graph extends in both directions with an open circle	

	APPLICATION	EX 4a.) Discounted fares are available to children 12 and under OR to adults at least 60 years of age.
	Write 2 inequalities with the word “OR”	

	Solving	EX 5:
	1.) Solve each individually	
	2.) graph on one graph.	

		EX 6:

“AND”

EX1: Write an inequality for all real numbers

*Final answer should have ONLY

that are at least -2 and at most 4

Less than

or

Less then/equal to

Writing a compound inequality

* Must be true for both solutions

* 2 dots on graph

---shade between them

APPLICATION

EX 1a.) Today's temperature will be above 32° F,
but not as high as 40 ° F.

Write your inequality as one long
inequality with the variable in the
middle!

---greater than ends up in front of
the variable as the “less than”

Solving compound inequality

EX 2: Solve and Graph

1.) Isolate the variable to the
middle of the inequality

----- use lines to show ALL three
parts of the inequality!!

When final answer has only
“greater than” signs, you need
to rewrite using less than...

EX 2a:

FINDING AVERAGES

1.) Add up totals and divide by
“how many” pieces of data.

EX 3: Acidity in water.... Average of three readings is between
7.2 and 7.8, inclusive. Readings are 7.4 and 7.9. What are the
Possible values for the third reading?

- Variable will be in the total!!!

(3.6) ABSOLUTE VALUE EQUATIONS AND INEQUALITIES EQUATIONS

EX 1: Solve

1.) Get the absolute value ALONE

2.) Set up two equations

--One with the positive answer

--One with the negative answer

EX 2:

3.) Solve BOTH to find both possible solutions!

EX 3:

DO NOT DISTRIBUTE TO A.V.

A.V. OF A > "OR" ≥

EX 4: Solve and Graph

"Greater than" Compound inequality

1.) set up two inequalities

1st ... without A.V.

2nd ... drop A.V.

- make the answer negative,
- flip the inequality symbol !!!

A.V. OF A < "AND" ≤

EX 5: Solve and graph

"Less Than" Compound inequality

--- One loooooooooong inequality

1.) A.V. drops and everything in
It goes to the "middle"

- Right side stays the same
- Left side... make negative
and use the same inequality!

2.) Solve

