Ch 4.5 ***Solving Compound Inequalities:***
consist of 2 inequalities connencted by an ***and*** or ***or***.

And - Solutions that work in both inequalities.
Where the graphs ***overlap***. (middle)

$-6 < x \leq 3$

Or - Are all solutions that work in the either inequality. To graph, combine both graphs. (Shade ends)

$x \leq -2$ or $x > 5$

Jan 29-8:09 AM

Ex 1)Write a compound inequality and graph it.

Ex1a) All real #'s greater than or equal to -2 and less than 3.

Ex1b) All real #'s less than or equal to -3 or greater than 0.

Applications: Write an inequality for:

If you get a grade of 79 - 100 in algebra I, you go to geometry.

If you get a grade of 93 - 100 you can take algebra II and geometry.

Jan 29-8:18 AM

Try1) All real #'s greater than 2 and less than or equal to 6.

Try 2) All real #'s less than 5 and greater than -2.

Jan 29-8:21 AM

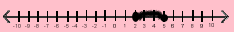
Helpful hints:
And Arrows go the same direction.
small # $\leq$ x $\leq$ large #
Or Arrows go the opposite direction.
x $\leq$ small # or x $\geq$ large #

Ex2) Write an inequality for the graph.

Ex2a)

Ex2b)

Try 3)

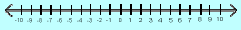


Try 4)

Jan 29-8:22 AM

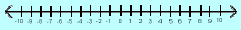
Ex3) Solving ***And*** problems:

Ex3a) $-5 \leq 2x + 3 < 7$



Ex3b) $-3 < -1 - 2x \leq 5$

Try #5) $4 \geq -3x + 1 > -2$

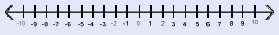


Jan 29-8:30 AM

Ex4) Solve ***Or*** problems:

Ex4a) $6x - 5 < 7$ or $8x + 1 \geq 25$

Ex4b) $-3x + 5 > 8$ or $-x < -4$



Try 6. $4x - 1 \geq 7$ or $5x - 1 < -6$

Jan 29-8:38 AM