2.4.D1 ~ Compound Inequalities

Past due on_____ Period____

Write each compound inequality in compact form. Use *x* as your variable.
Refer to the 2.4 example "Writing Compound Inequalities" in the Chapter 2 Summary.

1) All numbers less than or equal to 22 and greater than -4.

2) All numbers greater than or equal to 0 or less than or equal to 6.

3) The flowers in the garden are 6 inches or taller or shorter than 3 inches.

4) People with a driver's license are at least 16 years old and no older than 85 years old.

5) The heights of the twenty tallest buildings in New York City range from 229 meters to 381 meters.

6) Kyle's car gets more than 31 miles per gallon on the highway or 26 miles or less per gallon in the city.

Write and solve an inequality to answer the question.
Refer to the 2.3 example "Writing & Solving Inequalities" in the Chapter 2 Summary.

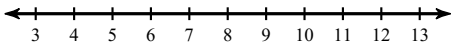
7) Leon plays on the varsity basketball team. So far this season he has scored a total of 52 points. He scores an average of 13 points per game. The function $f(x) = 13x + 52$ represents the total number of points Leon will score this season. How many more games must Leon play in order to score at least 100 points?

8) Elena works at the ticket booth of a local playhouse. On the opening night of the play, tickets are $10 each. They playhouse has already sold $500 worth of tickets during a presale. The function $f(x) = 10x + 500$ represents the total sales as a function of tickets sold on opening night. How many tickets must Elena sell in order to make at least $1200?

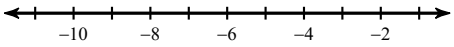
9) A hot air balloon at 4000 feet begins its descent. It descends at a rate of 200 feet per minute. The function $f(x) = -200x + 4000$ represents the height of the balloon as its descends. How many minutes have passed if the balloon is below 3000 feet?

Solve each inequality and graph its solution set.
Refer to the 2.3 examples "Writing & Solving Inequalities," "Representing Inequalities on a Number Line" and "Solving an Inequalitiy with a Negative Rate of Change" in the Chapter 2 Summary.

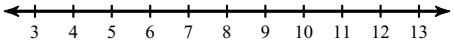
10) $1 + 8x < 16 + 5x$



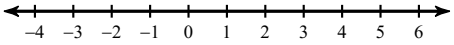
11) $-6x - 6 \leq 12 - 4x$



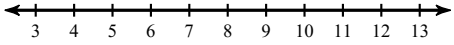
12) $2b - 2 > 13 - b$



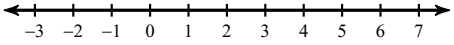
13) $-1 + 7b < 8 + 4b$



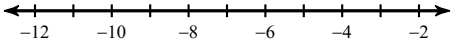
14) $1 - 4n \geq -11 - 2n$



15) $7 - 4r \geq -9 + 4r$



16) $-14 - 4m < -3m - 10$



17) $-9x - 20 > -5x + 9 - 9$