***Math 097 Brush Up Lesson*: SYSTEMS & INEQUALITIES**

If you placed into MATH 97 or a higher-level course, this might be useful for you

1. Determine whether or not the given point is a solution to the system.

a. (5, 2); System: $x + y = 7$, and $2x - 8 = y$

b. (–1, –2); System: $x + 3y = -7$, and $3x - 2y = 12$

2. Solve the system of linear equations.

a. System: $3x - 6 = y$, and $9x - 2y = 3$

b. System: $2x + y = 2$, and $x = -3 - y$

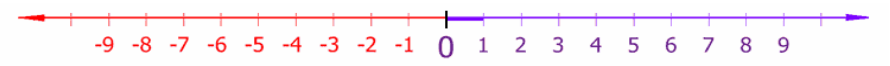
c. System: $x + y = 7$, and $2x - y = 8$

d. System: $5x - 7y = -16$, and $2x + 8y = 26$

3. Solve the simple linear inequality, graph your answer, and give your answer in interval notation.

a. $8 - x < 15$

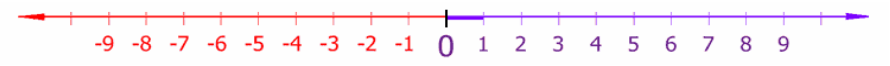
Line graph:



Interval:

b. $5(x - 3) + 4x \geq 2(7 + 2x)$

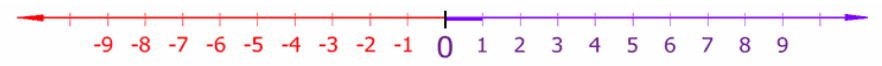
Line graph:



Interval:

c. $3x - 5 \leq 3 - x$

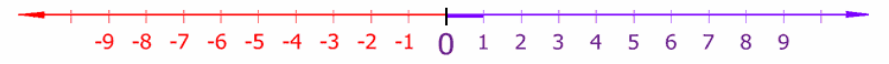
Line graph:



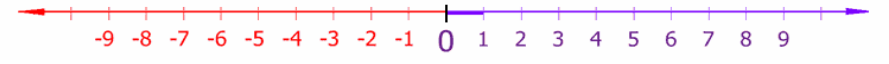
Interval:

4. Solve the compound linear inequality, graph your answer, and give your answer in interval notation.

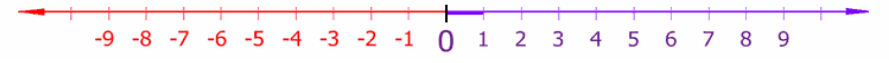
a. $x < -5$ ***or*** $x \geq 1$



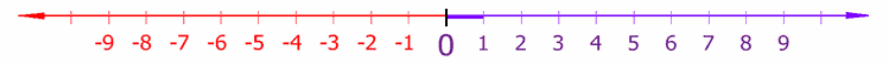
b. $x < 2$ ***and*** $x \geq -3$



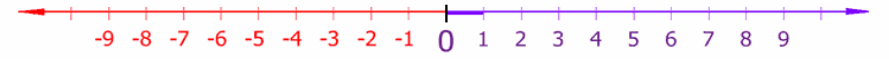
c. $x + 3 < 5$ ***and*** $x + 1 \geq -3$



d. $x + 5 < -3$ ***or*** $x + 5 \geq 4$



e. $-18 \leq 4x + 2 \leq 30$



5. The % of US households with an HDTV t years after 2005 can be approximated by $p(t) = 8t + 12.5$.
Use an inequality to find the years for which more than half of all US households will have an HDTV.