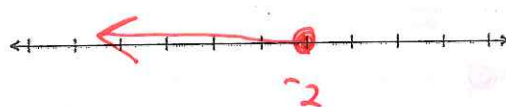
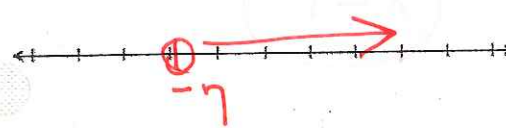

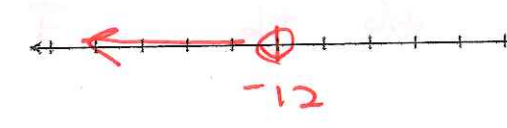


Unit 5 Learning Goals Check List:

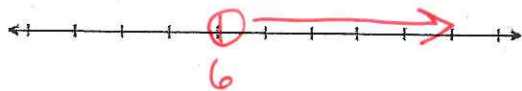
Key

Section	Learning Goal	✓
5.1& 5.2	<p>a) I can solve one step inequalities and correctly graph their solution sets on a number line.</p> <p>Ex. $13 - p \geq 15$ $-p \geq 2$ $p \leq -2$</p>  <p>Ex. $-2 < m + 5$ -5 $-7 < m$ $m > -7$</p>  <p>Ex. $\frac{3}{2} \left(\frac{2}{3} t \right) > (-8) \frac{3}{2}$ $t > -12$</p>  <p>Ex. $\frac{4}{3} \left(9 \right) < -\frac{3}{4} x$ $-12 > x$ or $x < -12$</p> <p>Flip the sign!</p> 	
	<p>b) I can write one step inequalities to represent verbal situations and solve for appropriate solutions.</p> <p>Ex. A bus can hold 44 people. If there are 29 people in Samantha's class, how many more can ride the bus?</p> <p>let $x =$ $\# \text{ add'l people}$</p> $29 + x \leq 44$ $\underline{-29}$ $x \leq 15$ <p>people</p> <p>Ex. The prom committee has no more than \$600 to spend on table decorations. If centerpieces cost \$35 each, what is the maximum number that they can buy?</p> <p>let $x =$ $\# \text{ centerpieces}$</p> $35x \leq 600$ $\underline{35}$ $x \leq 17$ <p>centerpieces</p> <p>Ex. Maxine has \$107 in her school lunch account. If she spends \$3.50 each day on lunch, how many days does she have before her money runs out?</p> <p>let $x =$ $\# \text{ lunches}$</p> $3.50x \leq 107$ $x \leq 30$ <p>lunches</p>	

5.3 a) I can solve multi-step inequalities and graph their solution set on a number line.

ex. $\frac{t}{3} - 6 > -4$

$\frac{t}{3} > 2$ $t > 6$



ex. $18 \leq -2x + 8$

$10 \leq -2x$
 $-5 \leq x$

$5 \geq x$
 $x \leq 5$



Ex. $2(1 + 4d) + 6 \leq -(2 - 6d)$

$2 + 8d + 6 \leq -2 + 6d$
 $8 + 8d \leq -2 + 6d$
 $-6d$

$8 + 2d \leq -2$
 $2d \leq -10$
 $d \leq -5$



b) I can write multi-step inequalities from verbal descriptions and solve for the solution set.

Ex. Four times a number decreased by six is less than -2. Define your variable and solve.

let $x =$
a number

$4x - 6 < -2$
 $+6$

$4x < 4$
 $x < 1$

$x < 1$

Ex. The one act play group at Westlake has \$160. They need at least \$400 to buy new lighting for the black box theater. If tickets for their current performance sell for \$3 each, how many tickets do they need to sell before they can buy new lights?

$\frac{400}{3} \geq \frac{160}{3}$
 240 needed for lights

$\frac{3t}{3} \geq \frac{240}{3}$
 $t \geq 80$

let $t =$ # tickets sold

they need to sell at least 80 tickets

Ex. Mrs. Hyink loves to read books. She has read 125 pages but her book is 367 pages long and she only has 14 days before her book group meets to discuss the book. Define a variable and write an inequality to determine how many pages she needs to complete each day!

let $p =$ # pages read
 $\frac{367}{14} \geq \frac{125}{14}$
 242 pages left to read

$\frac{14p}{14} \geq \frac{242}{14}$
 $p \geq 17.3$

she has to read more than 17 pages per day

5.4 I can solve compound inequalities and graph the solution set on a number line.

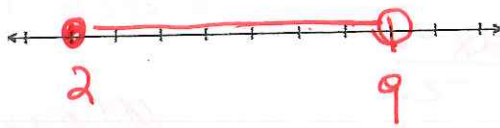
Interval notation

Ex. $m - 3 < 6$ and $m + 2 \geq 4$

$+3 +3$ $-2 -2$

$m < 9$ and $m \geq 2$

answer must satisfy both!



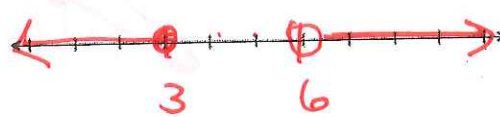
$[2, 9)$

Ex. $3x + 2 \leq 11$ or $5x - 8 > 22$

$3x \leq 9$ $5x > 30$

$x \leq 3$ or $x > 6$

either will work!



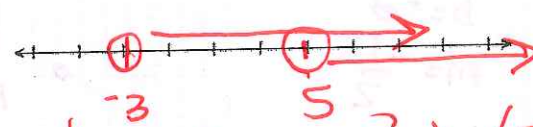
$(-\infty, 3] \cup (6, \infty)$

Ex. $-2x + 7 < 13$ or $5x + 12 > 37$

$-2x < 6$ $5x > 25$

$x > -3$ or $x > 5$

either will work!

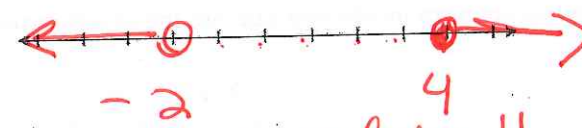


$(-3, \infty)$

Ex. $m - 1 < -3$ and $m + 1 \geq 5$

$m < -2$ and $m \geq 4$

both must work!



no solution!!

Ex. $-4 < 2t - 6 < 8$

$-4 < 2t - 6$ and $2t - 6 < 8$

$+6 +6$ $2t < 14$

$2 < 2t$ and $t < 7$

$t > 1$

$(1, 7)$ - interval notation



Extend: $6 < \frac{4b-2}{3} < 2$

$6 < \frac{4b-2}{3}$ and $\frac{4b-2}{3} < 2$

$18 < 4b - 2$

$4b - 2 < 6$

$20 < 4b$

$4b < 8$

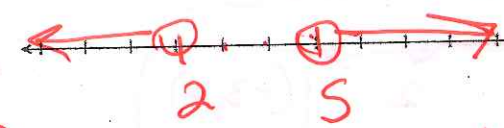
$5 < b$

$b < 2$

$b > 5$ and

answer must satisfy both inequalities

no solution

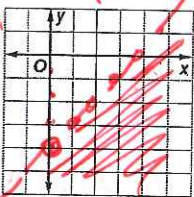


5.6 a) I can graph the solution set for linear inequalities in two variables.

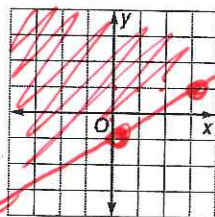
Ex. $2x - 2y > -8$

ex. $3y \geq 2x - 3$

Flip the symbol



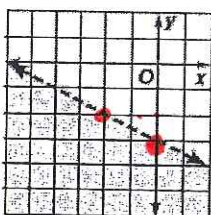
$y < x + 4$



$y \geq \frac{2}{3}x - 1$

b) I can write a linear inequality from its graphed solution.

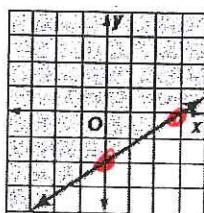
Ex.1



$b = -3$
 $m = -\frac{1}{2}$

$y < -\frac{1}{2}x - 3$

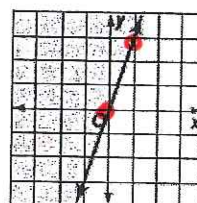
ex.2



$b = -2$
 $m = \frac{2}{3}$

$y \geq \frac{2}{3}x - 2$

ex.3



$b = 0$
 $m = 3$

$y \geq 3x$

c) I can identify points both inside and outside the solution set of inequalities.

Is (0, -3) in the solution set of ex. #1?

no!

Is (0, 0) part of the solution set of ex. #2?

yes

Is (0, 0) part of the solution set in ex. #3?

yes

5.5 Pre-AP Extend: a) I can solve absolute value inequalities and graph their solution set.

$< = \text{"and"}$
 $> = \text{"or"}$

Ex. $|2x + 1| < 5$

ex. $|c - 2| > 6$

$2x + 1 < 5$ and $2x + 1 > -5$
 $2x < 4$ $2x > -6$
 $x < 2$ and $x > -3$

$c - 2 > 6$ or $c - 2 < -6$
 $c > 8$ or $c < -4$



b) I can Write the absolute value inequality from its solution set.

Ex. Write the absolute value inequality from the given graph. Check your work by solving your answer algebraically!



$|x - 2| \leq 4$

midpoint!

$x - 2 \leq 4$ and $x - 2 \geq -4$

$x \leq 6$

$x \geq -2$

✓