DO NOW

Use this table to compare solving equations to solving inequalities:

	Equations	Inequalities
Solving	$-2x+6=14$	$-2x+6<14$
Things to remember about the solving process		
Number of Solutions		
Graph of Solution(s)		
How can I check my solution(s)?		

2.1- Solving Inequalities in One Variable

Basic:

$2x - 3 > 11$	Try on your own:
• Add 3 to both sides • Divide by 2 on both sides • Graph ⟵————————⟶	 ⟵————————⟶

Moving the variable in the final step:

$4 \leq 3w - 12$	Try on your own:
• Add 12 to both sides • Divide by 3 on both sides • Swap the variable and the number and flip the inequality symbol • Graph ⟵————————⟶	 ⟵————————⟶

Multiplying and Dividing by a Negative:

$-4x - 13 > 3$	Try on your own:
• Add 13 to both sides • Divide both sides by -4 and flip the inequality symbol • Graph ⟵————————————→	⟵————————————→

Changing the Inequality Twice:

$-13 \le 14 - 9w$	Try on your own:
• Subtract 14 from both sides • Divide both sides by -9 and change the inequality symbol • Swap the variable and the number and flip the inequality symbol • Graph ⟵————————————→	⟵————————————→

Most of our rules for solving equations work, but
KEY RULE FOR INEQUALITIES:

<u>"Funny Solution Sets"</u>

$$1 + 2x < 2(x - 1)$$

Solution: Graph:
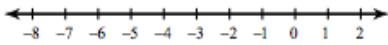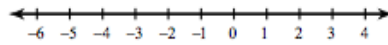
⟵————————————⟶

$$4x + 3(2 - 3x) < 5(2 - x)$$

Solution: Graph:

⟵————————————⟶

Multi-Step Inequalities

Solve each inequality and graph its solution.

1) $3 < -5n + 2n$
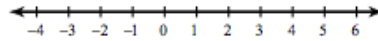
2) $6x + 2 + 6x < 14$
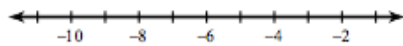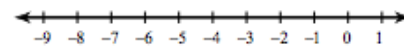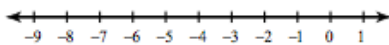
3) $-p - 4p > -10$
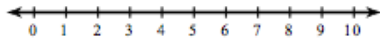
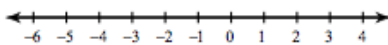4) $18 \geq 5k + 4k$

13) $a - 6 \leq 15 + 8a$

14) $13 + 2v - 8 + 6 > -7 - v$
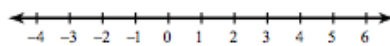
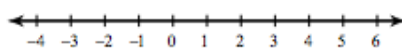15) $-5n - 6n \leq 8 - 8n - n$

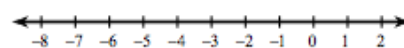16) $-x < -x + 7(x - 2)$

21) $-6(1 + 7k) + 7(1 + 6k) \leq -2$
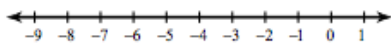
22) $-2(2 - 2x) - 4(x + 5) \leq -24$

23) $3(1 - 2x) > 3 - 6x$

24) $-2(5 + 6n) < 6(8 - 2n)$

Homework: p. 62 #1, 7, 13, 19, 23, 25, 27, 29