Name _____

Date _____ Pd _____
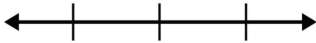
TWO-STEP INEQUALITIES

SOLVING TWO-STEP INEQUALITIES	• Inequalities can be solved by following the same steps as equations.
	
	   • The _____ must be alone or _____ on one side of the inequality.
	
	   • Isolate the variable by using _____ or opposite operations.
	
	   • Whatever you do to one side, you must do to the _____.
	
	• When you multiply or divide by a _____ number, the inequality sign is _____.

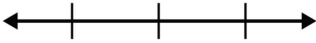Solve each inequality, check your answer, and then graph the solution.
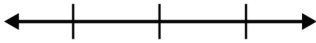
1.

$10 + 3k \leq 22$

_____

CHECK & GRAPH:

2.

$19 > -4p - 5$

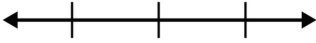_____

CHECK & GRAPH:

3.

$\frac{1}{2}r + 3 < 6$

_____

CHECK & GRAPH:

4.

$-12 \leq -5w - 32$

_____

CHECK & GRAPH:
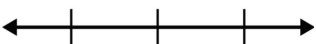
5.

$2c + 7.5 > -1.5$

_____

CHECK & GRAPH:
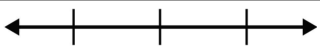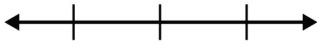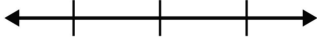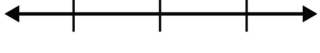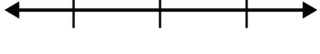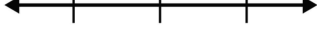
6.

$\frac{x}{-4} + 7 \leq 3$

_____

CHECK & GRAPH:

Solve the inequalities below for practice. Roll a pair of dice and find the sum of the two numbers showing. Solve that problem.

	SOLVE	SOLUTION	GRAPH
2	$4x - 8 < 32$		←———+———+———+———→
3	$-6x + 9 \leq 25$		←———+———+———+———→
4	$\frac{3}{4}x + 8 < 41$		←———+———+———+———→
5	$2.5x - 10 > 25$		←———+———+———+———→
6	$\frac{x}{6} + 2 \geq -16$		←———+———+———+———→
7	$-16 > 5 + 7x$		←———+———+———+———→
8	$6 + 1.5x < -12$		←———+———+———+———→
9	$-8x - 9 > -21$		←———+———+———+———→
10	$42 \geq -6 + 3x$		←———+———+———+———→
11	$-10x + 25 \leq 5$		←———+———+———+———→
12	$30 \leq 3x - 5$		←———+———+———+———→

SHOW WORK HERE:

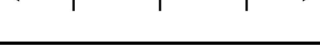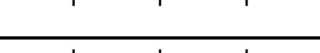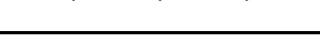Use your understanding of solving inequalities to answer the questions below.

7. Rodney was asked to place a check mark next to any inequality for which x = –3 makes the inequality true. Check over his work and correct any mistakes.

QUESTION #1
✓ $-5 \geq 4x + 11$

QUESTION #2
✓ $\frac{x}{2} + 5 \leq 3.5$

QUESTION #3
$14 + 2x < 9$

8. Mrs. Miles asked her students to identify which values from the set {-8, -4.5, -4, -3, -2.5, 0, 5} satisfy the inequality $-4x - 25 \leq -9$. Which student is correct?

XAVIER
–8, –4.5, and –4 only

KAYLEE
0 and 5 only

LIANG
–4, –3, –2.5, 0, and 5 only

Summarize today's lesson:

Name _____

Date _____ Pd _____

TWO-STEP INEQUALITIES

Jamie is playing memory with math cards. Match each inequality with its solution. Record the matches at the bottom of the page and graph the solution set on the number line.

A $4x - 2 > 12$	**B** $-2x + 6 < 20$	**C** $\dfrac{x}{-3} - 2 < -4$	**D** $3x - 1 \leq -10$
E $\dfrac{x}{2} + 7 \geq 9$	**F** $17 < -5x - 23$	**G** $-3 \geq 6x + 39$	**H** $\dfrac{x}{4} + 5 > 6$
I $x > -7$	**J** $x \leq -3$	**K** $x \leq -7$	**L** $x > 6$
M $x \geq 4$	**N** $x < -8$	**O** $x > 3.5$	**P** $x > 4$

A		B		C		D	
←—+——+——+——→		←—+——+——+——→		←—+——+——+——→		←—+——+——+——→	

E		F		G		H	
←—+——+——+——→		←—+——+——+——→		←—+——+——+——→		←—+——+——+——→	