Academic Algebra 1

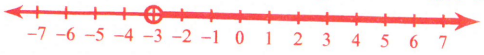
Open dot <, >
Closed dot ≤, ≥, = Name _____ ID: 1

# Chapter 6 Review

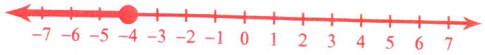
Date _____ Period ____

**Draw a graph for each inequality.**

1) $x > -3$ Tip: Variable symbol # Then symbol + arrow go in same direction

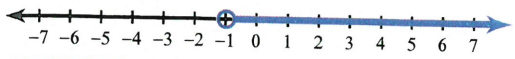



2) $-4 \geq x$ ← Tip: Rewrite $x \leq -4$



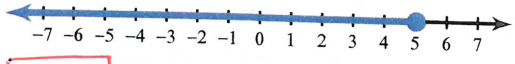

**Write an inequality for each graph. Use the variable "X"**

3)




$x > -1$ ← ∴ Write X symbol # "

4)




→ $x \leq 5$

**SOLVE each inequality. Circle the solution. Then GRAPH its solution.**

5) $4 \leq 2n - 3n$

$n \leq -4$ :


$\frac{4}{-1} \leq \frac{-N}{-1}$ When you mult/div. the variable by a negative # reverse the symbol!!

$-4 \geq N$ rewrite

$n \leq -4$ ←


6) $-24 > 1 - 4x + 3$

$x > 7$ :


Simplify → $-24 > -4x + 4$

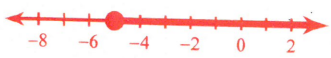
$-4 \quad -4$

$\frac{-28}{-4} > \frac{-4x}{-4}$

$7 < x \rightarrow x > 7$


7) $-6x - 3(x - 3) \leq 39 - 3x$

$x \geq -5$ :




$-6x - 3x + 9 \leq -3x + 39$

$-9x + 9 \leq -3x + 39$

$-6x + 9 \leq 39$

$\frac{-6x}{-6} \leq \frac{30}{-6}$ → $x \geq -5$


**SOLVE each compound inequality. Circle the solution. Then GRAPH its solution.**

8) $8 \leq 3x - 10 \leq 20$ ← Isolate X

+10 +10 +10

$6 \leq x \leq 10$ :


$\frac{18}{3} \leq \frac{3x}{3} \leq \frac{30}{3}$

$6 \leq x \leq 10$


9) $7 \leq 7 - 6x \leq 55$

-7 -7 -7

$0 \leq -6x \leq 48$

$-8 \leq x \leq 0$ :


$\frac{0}{-6} \leq \frac{-6x}{-6} \leq \frac{48}{-6}$

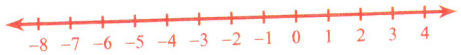
$0 \geq x \geq -8$ rewrite → $-8 \leq x \leq 0$

**Solve each compound inequality and graph its solution. THINK!**

10) $-4a < -40$ and $a + 8 \leq 13$

$\div -4$ $\div -4$ $-8$ $-8$

No solution. :




A > 10 AND A ≤ 5


LOOK AT GRAPH. "AND" MUST INTERSECT

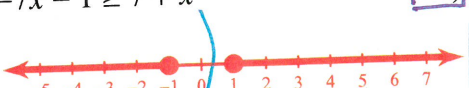
SINCE IT DOES NOT INTERSECT

X = NO SOLUTION

**Solve each compound inequality and graph its solution.**

11) $4 - x \leq 9x - 6$ or $-7x - 1 \geq 7 + x$

$x \geq 1$ or $x \leq -1$ :




$-10x \leq -10$ $-8x \geq 8$

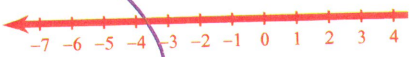
$\div -10$ $\div -10$ $\div -8$ $\div -8$

X ≥ 1 OR X ≤ -1

MUST HAVE


12) $1 + 7x \geq -27$ or $-6x + 6 \geq -30$

{ All real numbers. } :




$7x \geq -28$ $-6x \geq -36$

$\div 7$ $\div 7$ $\div -6$ $\div -6$

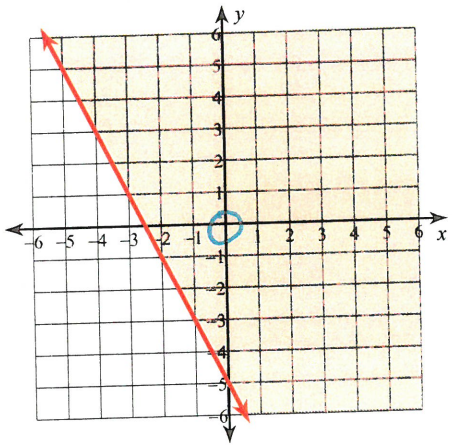
X ≥ -4 OR X ≤ 6

"OR" overlaps & covers entire number line


X = ALL REAL NUMBERS

**Sketch the graph of each linear inequality.**

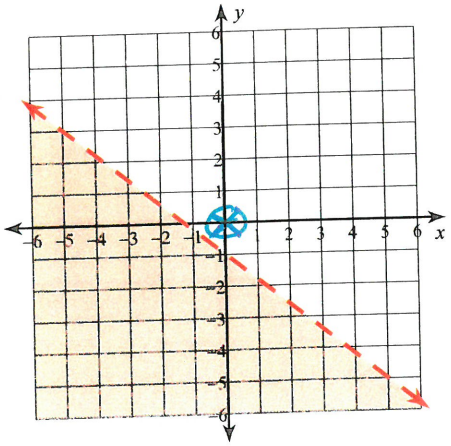
13) $y \geq -2x - 5$




T(0,0)

0 ≥ -5 T

14) $y < -\frac{4}{5}x - 1$




T(0,0)

0 < -1 F