

(12)

Solving & Graphing Inequalities

* same as solving equations, BUT whenever you multiply or divide by a negative you flip the sign.

Steps:

- ① Get all variables to one side of the inequality.
- ② Solve the inequality and write in order
- ③ Make a number line (variable, sign, #)
- ④ Open or Closed circle?
- ⑤ Shade w/ arrow in the appropriate direction.

<u>Open Circle</u>	<u>Closed Circle</u>
$> <$	$\geq \leq$
(No equal bar)	(equal to bar)
<u>Shade Right</u>	<u>Shade Left</u>
$> \geq$	$< \leq$
(greater)	(less)

Ex) $-5x + 10 > 30$

No equal bar (open circle)
less so shade left.

$-5x > 20$

$x < -4$

divided by a (-)
flip sign



Ex) $5 - 3x \leq 13 + x$

$-8 \leq 4x$

$-2 \leq x$

$x \geq -2$



* Inequality Phrases

"at least" $\geq$ greater or equal

"No more than" $\leq$ less or equal

"at most" $\leq$ less or equal