Algebra 1   5.1
Solve linear inequalities by using addition*
Solve linear inequalities by using subtraction*

inequality $<$ $>$ $\leq$ $\geq$
set builder notation
addition property
subtraction property
whiteboards
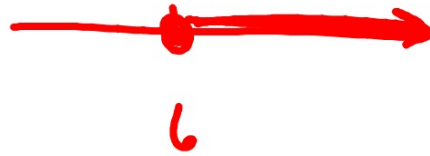
triangle puzzles (if time)

$x < 3$

3

$-3 < n$

$n \geq -3$

$n < -3$

3

$n \leq -3$

Example 3 Variables on Each Side

Solve $3a + 6 \leq 4a$. Then graph the solution set on a number line.

$-3a \qquad -3a$

$$6 \leq a$$

$$a \geq 6$$

Whiteboards

Solve each inequality. Then graph

3A. $9n - 1 < 10n$

$$-9n \qquad -9n$$

$$-1 < n$$

$$n > -1$$

$$<$$

3B. $5h \leq 12 + 4h$

$$5h \leq 12 + 4h$$
$$-5h \qquad\qquad -5h$$
$$\overline{}$$
$$0 \leq 12 - h$$
$$-12 \quad -12$$
$$\overline{}$$
$$\frac{-12}{-1} \leq \frac{-h}{-1}$$
$$12 \geq h$$

triangle puzzle (if time)

12

$2h \geq 5h + 6$
$-5h \quad -5h$
――――――――――――――
$\dfrac{-3h}{-3} \geq \dfrac{6}{-3}$

$h \leq -2$

$2h \geq 5h + 6$
$\quad -6 \qquad -6$
――――――――――――
$2h + -6 \geq 5h$
$-2h \qquad -2h$
――――――――――――
$\dfrac{-6}{3} \geq \dfrac{3h}{3}$

$-2 \geq h$

$2h \geq 5h + 6$
$-2h \quad -2h$
――――――――――――
$0 \geq 3h + 6$
$-6 \qquad\quad -6$
――――――――――――
$\dfrac{-6}{3} \geq \dfrac{3h}{3} \qquad -2 \geq h$

$p\ 288$
$14-30\ e$

$$\{h \mid h \geq 0\}$$