

Algebra 1

5.1

$$\begin{array}{cc} < & > \\ \leq & \geq \end{array}$$

* 8th grade standard

Solve linear inequalities by using addition*

Solve linear inequalities by using subtraction*

inequality „

“set builder” notation

addition property

subtraction property

whiteboards

$$\{x \mid x < 3\}$$

triangle puzzles (if time)

$$3B. \begin{array}{r} 5h \leq 12 + 4h \\ -4h \quad -4h \\ \hline \end{array}$$

$$1h \leq 12$$

$$h \leq 12$$

$$\begin{array}{r} 5h \leq 12 + 4h \\ -5h \quad -5h \\ \hline \end{array}$$

$$\begin{array}{r} 4h \leq 12 + 5h \\ -4h \quad -4h \\ \hline \end{array}$$

$$\begin{array}{r} 0 \leq 12 + h \\ -12 \quad -12 \\ \hline \end{array}$$

$$-12 \leq h$$

triangle puzzle (if time)



$$\begin{array}{r} 3n < 5 + 2n \\ -2n \quad \quad -2n \end{array}$$

$$n < 5$$

What are the 3 options?

$K = J$
 $K < J$
 $K > J$

7 > 5

~~\forall~~
 $||$

~~\forall~~
 $||$ \forall

Concept Summary Phrases for Inequalities			
$<$	$>$	\leq	\geq
less than fewer than	greater than more than	<u>at most, no more than,</u> less than or equal to	<u>at least, no less than,</u> greater than or equal to

Real-World Example 4 Use an Inequality to Solve a Problem

PETS Felipe needs for the temperature of his leopard gecko's basking spot to be at least 82°F . Currently the basking spot is 62.5°F . How much warmer does the basking spot need to be?

**Real-WorldLink**

Leopard geckos are commonly yellow and white with black spots. They are nocturnal and easy to tame. They do not have toe pads like other geckos, so they do not climb.

Source: Exotic Pets

$$\begin{array}{r} 62.5 + t \geq 82 \\ -62.5 \quad + \geq -62.5 \\ \hline t \geq 19.5 \end{array}$$

30

$$\begin{array}{r} 2n > n + 9 \\ -1n \quad -n \\ \hline \end{array}$$

$$1n > 9$$

31.

$$\begin{array}{r} 2n + 5 \leq n - 3 \\ -n \quad -5 \quad -n \quad -5 \\ \hline \end{array}$$

$$n \leq -8$$

$$32. \quad 3n + -4 \geq 2n + 8$$

$$\begin{array}{r} 3x + -4 \geq 2x + 8 \\ -2x \quad \quad -2x \end{array}$$

$$\begin{array}{r} x + -4 \geq 8 \\ \quad +4 \quad +4 \\ \hline x \geq 12 \end{array}$$

33.

$$\frac{6n-8}{-5n+8} < \frac{5n+21}{-5n+8}$$

$$n < 29$$