6.3 Introduction to Linear Inequalities

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Inequality a mathematical statement comparing expressions that may not be equal

* can be written using the symbols $>$ $<$ $\leq$ $\geq$ or $\neq$

Reading an inequality (3 ways)

(1) Verbally (using words)

Inequality	meaning
$a > b$	a is greater than b
$a < b$	a is less than b
$a \geq b$	a is greater than or equal to b
$a \leq b$	a is less than or equal to b
$a \neq b$	a is not equal to b

(2) Graphically
- set up a # line with the target # in the middle

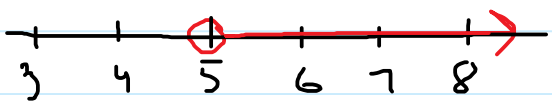
in the middle

Inequality	Symbol
$>$ or $<$	use ○ on the # #means the point is not included in the solution
$\geq$ or $\leq$	use ● on the # #means the point is included
$>$ or $\geq$	use $\longrightarrow$ right arrow
$<$ or $\leq$	use $\longleftarrow$ left arrow

(3) Algebraically
- use symbols such as variables

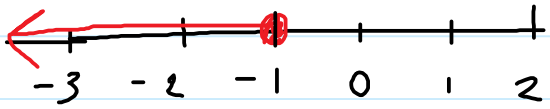
Ex #1
Graph each inequality

(a) $b > 5$



b can be 6, 7, 8 (not 5)

(b) $y \leq -1$



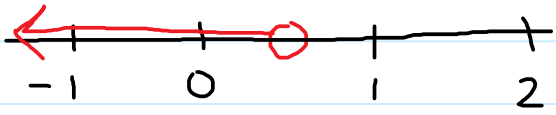
y can be -1, -2, -3

(c) $0.5 > p$

(d) $\frac{-1n}{-1} < \frac{4}{-1}$

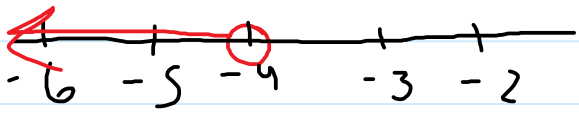
(c) $0.5 > p$

$p < 0.5$



(d) $\frac{-1n}{-1} < \frac{4}{-1}$

$n < -4$



pg 292 #3-6, 9, 10, 12, 13