

Chapter #9 Linear Inequalities

December 1, 2015 10:05 AM

Inequality a mathematical statement comparing expressions, that may **not** be equal

VERBALLY using words

$a > b$ 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

GRAPHICALLY using a # line

$>$ or $<$ use \circ on the #

\geq or \leq use \bullet on the # * means the point is included in the solution

\geq or \leq

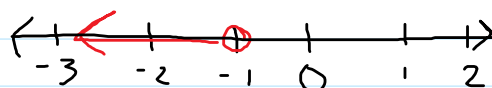
$>$ or \geq use \rightarrow RIGHT arrow

$<$ or \leq use \leftarrow LEFT arrow

Ex #1

a) $m < -1$

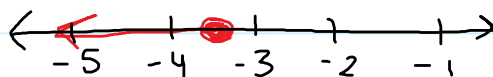
\uparrow
open point
left arrow



solutions for m can be
 $-2, -3, -4$
NOT -1 itself!

b) $x \leq -3.5$

\uparrow
closed point
left arrow

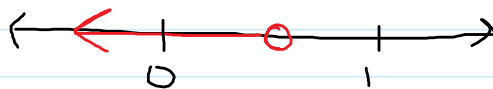


solutions for x can be
 $-3.5, -4, -5$

c) $0.5 > p$

re-write

$p < 0.5$
 \uparrow



solutions for p can be

$$p < 0.5$$

↑
open point
left arrow

0 1
solutions for p can be
0, -1, -2

Ex #2

$$a) \frac{8x}{8} \leq \frac{24}{8}$$

$$x \leq 3$$

$$b) \frac{x}{-2} > 6x - 2$$

$$x < -12$$

* reverse the
inequality when
x or -
by a
negative!!

$$c) \frac{-n}{-x} < \frac{4}{-1}$$

$$n > -4$$

$$d) -5 > \frac{x}{3}$$

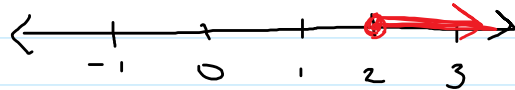
$$-15 > x$$

re-write

$$x < -15$$

$$e) 5x + 6 \geq 16$$
$$\frac{5x}{5} \geq \frac{10}{5}$$

$$x \geq 2$$



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