

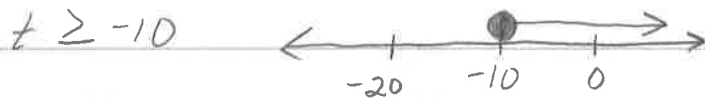
9/5 Algebra - Downing

Bellwork - Use $<$, $>$ or $=$

- 1) $4 = 4$ 2) $7 > -2$ 3) $-5 < 4$
 4) $4 > -3$ 5) $3 > -6$ 6) $4 > -1$

Solve and Graph Inequalities

Ex) The temperature (t) in Sweden is at least -10°C



Ex) The elevation (e) of Alabama is at most 2407 feet.



Ex) $x \geq 1$ x is all real numbers greater than or equal to 1

Ex) $x > 1$ x is all real numbers greater than 1

Ex) $x \leq 1$ x is all real numbers less than or equal to 1

Ex) $x < 1$ x is all real numbers less than 1

Ex) A number (w) minus 3.5 is less than or equal to -2

$$\begin{array}{r} w - 3.5 \leq -2 \\ -3.5 \quad -3.5 \\ \hline w \leq 1.5 \end{array}$$

Ex) Three is less than a number (n) plus 5

$$\boxed{n > -2}$$

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

← rewrite with n on the other side

Ex) Zero is greater than or equal to twice a number x plus 1.

$$\frac{0 \geq 2x + 1}{-1 \quad -1}$$

$$\frac{-1 \geq 2x}{2 \quad 2}$$

$$-\frac{1}{2} \geq x$$

$$x \leq -\frac{1}{2}$$

$$\frac{0 \geq 2x + 1}{-2x \quad -2x}$$

$$\frac{2x \geq 1}{-2 \quad -2}$$

$$x \leq -\frac{1}{2}$$

★ Flip sign when you mult. or divide by a negative.

Tell whether -6 is a solution of the inequality.

Ex) $c + 4 < -1$ ★ Plug in -6 for c

$$-6 + 4 < -1$$

$-2 < -1$ ★ is it a true statement? Yes it is a solution
True

Ex) $10 \leq 3 - m$ ★ Plug in -6 for c

$$10 \leq 3 - (-6)$$

$$10 \leq 3 + 6$$

$10 \leq 9$ ★ is it a true statement? No, it is not a solution

HW. p. 58 # 2, 5, 8, 11, 16, 21, 24, 27, 30, 43