

Section 3-2: Solving Inequalities Using Addition or Subtraction

Solving an inequality is a lot like solving an equation...

Example 1:

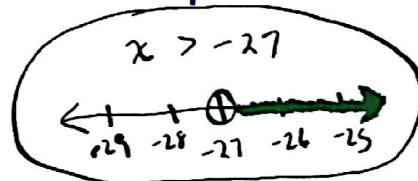
$$\begin{array}{r} x + 15 = -12 \\ -15 \quad -15 \end{array}$$

$$x = -27$$

$$x = -27$$

$$\begin{array}{r} x + 15 > -12 \\ -15 \quad -15 \end{array}$$

$$x > -27$$



Example 2:

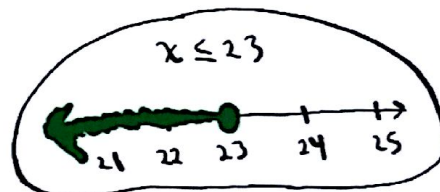
$$\begin{array}{r} x - 5 = 18 \\ +5 \quad +5 \end{array}$$

$$x = 23$$

$$x = 23$$

$$\begin{array}{r} x - 5 \leq 18 \\ +5 \quad +5 \end{array}$$

$$x \leq 23$$

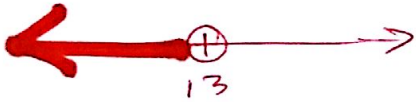


You are allowed to subtract or add any number on BOTH SIDES of an inequality.

Example 3:

a. $y - 2 < 11$
+2 +2

$y < 13$



b. $x + 5 \geq 10$
-5 -5

$x \geq 5$



c. $-6 < c - 2$

$c - 2 > -6$
+2 +2

$c > -4$



d. $2 \geq 9 + c$

$c + 9 \leq 2$
-9 -9

$c \leq -7$



e. $a + 5.2 < -4.6$
-5.2 -5.2

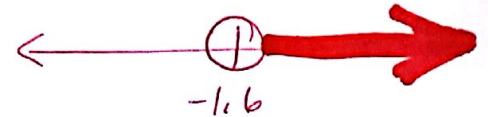
$a < -9.8$



f. $-2.5 < n - 0.9$

$n - 0.9 > -2.5$
+0.9 +0.9

$n > -1.6$



g. $-4p - 2 + 5p > 10$

$p - 2 > 10$

$p > 12$

