

## 11.2 Solving Inequalities Using Addition or Subtraction p.472

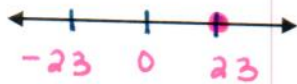
\*Keep everything organized and lined up

\*Solving inequalities is almost the same as solving equations

$$n - 8 = 15$$

$$\begin{array}{r} +8 \quad +8 \\ n - 8 = 15 \\ \hline n = 23 \end{array}$$

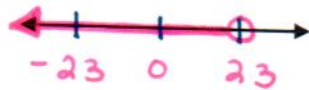
→ solution of the equation



$$n - 8 < 15$$

$$\begin{array}{r} +8 \quad +8 \\ n - 8 < 15 \\ \hline n < 23 \end{array}$$

→ solution of the inequality



→ graph of the solution

How do we check solutions of inequalities?

- Choose a number different than the solution
- Choose a number that the arrow would touch and plug it in

try 0

$$0 - 8 < 15$$

$$-8 < 15 \text{ true } \checkmark$$

so it's correct

1)  $12 < t + 3$

$$\begin{array}{r} -3 \quad -3 \\ 12 < t + 3 \\ \hline 9 < t \end{array}$$

or  $t > 9$



2)  $f - 5 \geq -11$

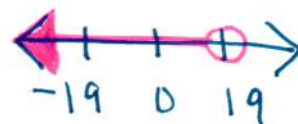
$$\begin{array}{r} +5 \quad +5 \\ f - 5 \geq -11 \\ \hline f \geq -6 \end{array}$$

$$f \geq -6$$



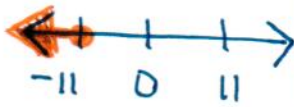
- 3) The difference between a number and eleven is less than eight.

$$\begin{array}{r} n - 11 < 8 \\ +11 \quad +11 \\ \hline n < 19 \end{array}$$



4) The sum of a number and seventeen is no more than six.

$$\begin{array}{r}
 n + 17 \leq 6 \\
 \underline{-17 \quad -17} \\
 n \leq -11
 \end{array}$$



Sum +  
difference -  
quotient ÷  
product x

5)  $b - 3.8 \leq 1.7$

$$\begin{array}{r}
 b - 3.8 \leq 1.7 \\
 \underline{+3.8 \quad +3.8} \\
 b \leq 5.5
 \end{array}$$

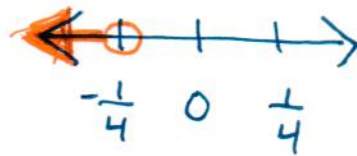


6)  $-\frac{1}{2} > j - \frac{1}{4}$

$$\begin{array}{r}
 -\frac{1}{2} > j - \frac{1}{4} \\
 \underline{+\frac{1}{4} \quad +\frac{1}{4}} \\
 -\frac{1}{4} > j
 \end{array}$$

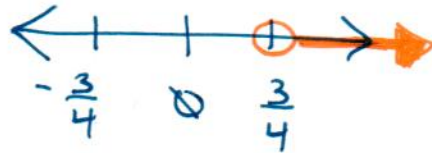
or

$$j < -\frac{1}{4}$$



7)  $x + \frac{3}{4} > 1\frac{1}{2} = \frac{26}{4}$

$$\begin{array}{r}
 x + \frac{3}{4} > \frac{26}{4} \\
 \underline{-\frac{3}{4} \quad -\frac{3}{4}} \\
 x > \frac{3}{4}
 \end{array}$$

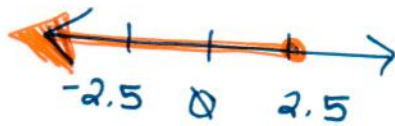


8)  $-7.5 \geq d - 10$

$$\begin{array}{r}
 -7.5 \geq d - 10 \\
 \underline{+10 \quad +10} \\
 2.5 \geq d
 \end{array}$$

or

$$d \leq 2.5$$



$$\begin{array}{r}
 -\frac{2}{4} \\
 \underline{+\frac{1}{4}} \\
 -\frac{1}{4}
 \end{array}$$

$$\begin{array}{r}
 9 \\
 10.0 \\
 \underline{-7.5} \\
 2.5
 \end{array}$$