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

$n - 8 = 15$

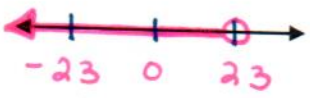
$+8 \quad +8$

$n = 23$ → solution of the equation

$n - 8 < 15$

$+8 \quad +8$

$n < 23$ → 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

$0 - 8 < 15$

$-8 < 15$ true ✓

so it's correct

1) $12 < t + 3$

$-3 \quad -3$

$9 < t$ or $t > 9$

2) $f - 5 \geq -11$

$+5 \quad +5$

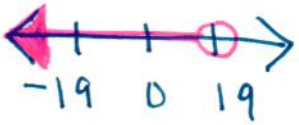
$f \geq -6$

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

$n - 11 < 8$

$+11 \quad +11$

$n < 19$



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

$n + 17 \leq 6$

$-17 \quad -17$

$n \leq -11$

Sum +
difference −
quotient ÷
product ×

5) $b - 3.8 \leq 1.7$

$+3.8 \quad +3.8$

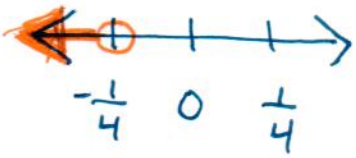
$b \leq 5.5$

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

$-\frac{2}{4}$

$+\frac{1}{4} \quad +\frac{1}{4}$

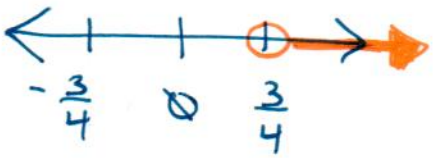
$-\frac{1}{4} > j$ or $j < -\frac{1}{4}$



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

$-\frac{3}{4} \quad -\frac{3}{4} = -\frac{3}{4}$

$x > \frac{3}{4}$



8) $-7.5 \geq d - 10$

$+10 \quad +10$

$2.5 \geq d$

or

$d \leq 2.5$

9
10.0
-7.5
2.5