Solving Inequalities

7.6 Using Addition and Subtraction

EQ: How can you use addition or subtraction to solve an inequality?

★ When solving inequalities, the same rules apply as solving equations.

★ Goal - isolate the variable, keep each side of the equal sign balanced.

Example 1: $x - 5 > 1$

3 Q's
1. What are we solving for?
2. What is being done to the variable?
3. What is the inverse operation?

① x
② -5
③ $+5$

do this to both sides

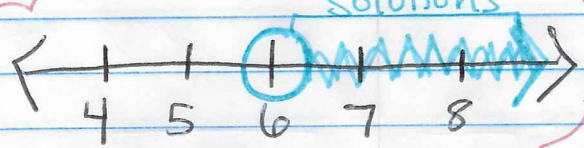
line for balance

$+5 \quad +5$

$x > 6$

$x > 6$

solutions



open circle because 6 is not a solution!

Example 2: $15 \geq 6 + x$

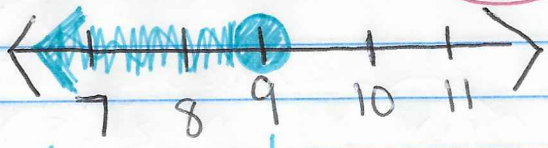
① x
② $+6$
③ -6

Do this to both sides

$-6 \quad -6$

$9 \geq x$

$9 \geq x$
- OR -
$x \leq 9$



solutions

★ all the shaded numbers on the number line are possible solutions.