

Section 3.4

Solving Inequalities

Using Addition and Subtraction

Goal: to use inverse operations to solve equations.

inequality:


$$x > 7$$

$$x < 7$$

$$x \geq 7$$

$$x \leq 7$$

Graph to show all solutions.

$$x < 5$$


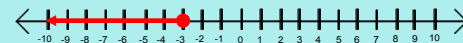
$$x \geq -3$$


$$-3 \leq x$$

Write the inequality



$$x > -7$$



$$x \leq 3$$

Addition and Subtraction Properties of Inequality

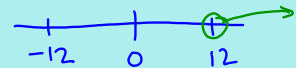
if $a < b$, then $a + c < b + c$

if $a < b$, then $a - c < b - c$

Solve and graph:

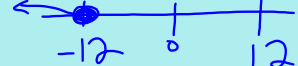
$$r - 5 > 7$$

$$\begin{array}{r} +5 \\ +5 \\ r > 12 \end{array}$$



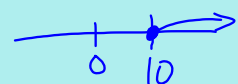
$$-10 \geq x + 2$$

$$\begin{array}{r} -2 \\ -2 \\ -12 \geq x \end{array}$$



$$q + 4 + 16 \geq 30$$

$$\begin{array}{r} q + 20 \geq 30 \\ -20 \\ -20 \\ q \geq 10 \end{array}$$



On the first two tests in math class, Collin had scores of 89 and 95 points. The third math test is tomorrow and Collin's goal is to have a total score of 279 or higher on the three test scores in order to have an A average. What possible scores can he have to make this happen?

$$X + \underline{89 + 95} \geq 279$$

$$\begin{array}{r} X + 184 \geq 279 \\ -184 \quad -184 \\ X \geq 95 \end{array}$$

Hwk: pg. 142- 144

#3 - 6, 12 - 38 evens,

39 - 42 all