

# Mathematics 9

## Section 6.4 - Solving Linear Inequalities by Using Addition & Subtraction

When solving inequalities, we use the exact same rules as we did to solve regular algebra equations. We still need to keep the concept of inverse operations at the forefront of our thinking.

Examples:  $n + 4 < 11$

\* USE ADDITION/SUBTRACTION TO ISOLATE VARIABLE

$$\begin{array}{r} n + 4 < 11 \\ -4 \quad -4 \\ \hline n < 7 \end{array}$$

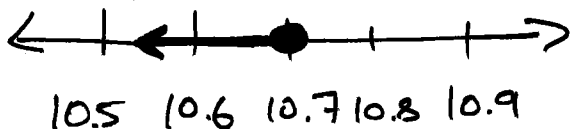
VERIFY:

CHOOSE ANY NUMBER LESS THAN 7  
FOR  $n$ . I PICKED  $n = 4$

$$\begin{array}{r} n + 4 < 11 \\ 4 + 4 < 11 \\ 8 < 11 \quad \checkmark \end{array}$$

Practice & Graph:

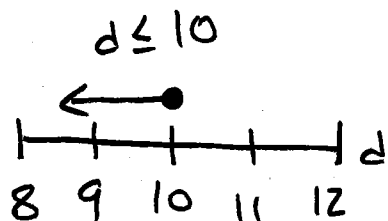
$$\begin{array}{r} a) \quad 6.2 \geq n - 4.5 \\ +4.5 \quad +4.5 \\ \hline 10.7 \geq n \end{array}$$



p. 298 # 6a, b, 7, 8ace, 9ace, 12

$$\begin{array}{r} 90 + 5d \leq 100 + 4d \\ -4d \quad -4d \\ \hline 90 + d \leq 100 \end{array}$$

$$\begin{array}{r} 90 + d \leq 100 \\ -90 \quad -90 \\ \hline d \leq 10 \end{array}$$



VERIFY:

PICKING  $d = 2$ , IT'S LESS THAN 10

$$\begin{array}{r} 90 + 5d \leq 100 + 4d \\ 90 + 5(2) \leq 100 + 4(2) \\ 90 + 10 \leq 100 + 8 \\ 100 \leq 108 \quad \checkmark \end{array}$$

$$\begin{array}{r} b) \quad 3x > 2x - 11 \\ -2x \quad -2x \\ \hline x > -11 \end{array}$$

