

# 6.4 Solving Linear Inequalities by Using Addition & Subtraction

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The strategy we use to solve **equations** can be used to solve **inequalities**  
 ↳ Isolate the variable  
 ↳ SOLVE!

## EQUATION

$$r - \cancel{6} = -2$$

$$+6 \quad +6$$

$$\boxed{r = 4}$$

## INEQUALITY

$$r - \cancel{6} < -2$$

$$+6 \quad +6$$

$$\boxed{r < 4}$$

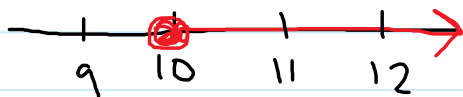
Ex #1

Solve and graph  
 (a)  $6 \leq x - 4$   
 re-write

$$x - \cancel{4} \geq 6$$

$$+4 \quad +4$$

$$\boxed{x \geq 10}$$



(b)  $3d + 2 < 2d - 2$

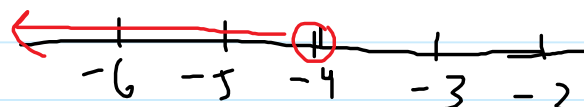
$$\cancel{3d} + 2 < \cancel{2d} - 2$$

$$-2d \quad +2d$$

$$1d + 2 < -2$$

$$-2 \quad -2$$

$$\boxed{d < -4}$$



Ex. #2

Solve

$$\frac{x}{\cancel{4}} + \frac{11}{2} < \frac{7}{\cancel{4}}$$

$$x + \frac{44}{2} < 7$$

$$\begin{array}{r} x + 22 < 7 \\ - 22 \quad -22 \end{array}$$

$$x < -15$$

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