

$(2x + 3) + 7 = 4x + 2$	
Steps	Justification
$(2x + 3) + 7 = 4x + 2$	Start
$2x + (3 + 7) = 4x + 2$	Associative
$2x - 2x + 10 = 4x - 2x + 2$	CLT / Sub. Prop. Equality
$0 + 10 = 2x + 2$	Additive Inverse
$10 = 2x + 2$	Additive Identity
$10 - 2 = 2x + 2 - 2$	Sub. prop. of Equality
$8 = 2x + 0$	Additive Inverse
$8 = 2x$	Additive Identity
$\frac{8}{2} = \frac{2x}{2}$	Division Prop. Equality
$4 = x \cdot 1$	Multiplicative Inverse
$x = 4$	Symmetric

Solve each equation.

$$27 - 26 = 1$$

$$3(5+4) - 2(3(5)-2) = 1$$

7. $3(x+4) - 2(3x-2) = 1$

$$3x + 12 - 6x + 4 = 1$$

$$-3x + 16 = 1$$

$$\frac{-3x}{-3} = \frac{-15}{-3} \quad x = 5$$

8. $2x + 25 = 5x + 10$

$$\frac{-5x \quad -5x}{-3x + 25 = 10}$$

$$\frac{-25 \quad -25}{-3x = -15}$$

$$\frac{-3x}{-3} = \frac{-15}{-3} \quad x = 5$$

What "special cases" can you have when solving equations and inequalities?

$$\begin{array}{l} -3x + 9 = -3x + 6 \\ +3x \quad 9 \neq 6 \quad +3x \\ \text{no solution} \end{array} \quad \left| \quad \begin{array}{l} 2x + 4 = 2x + 4 \\ -2x \quad 4 = 4 \\ \text{all real numbers} \end{array} \right. \mathbb{R}$$

When you multiply or divide by a negative when solving an inequality, what must you remember to do?

$$\frac{-3x + 9}{+3x} > \frac{-3x + 6}{+3x}$$

$$9 > 6 \quad \text{T}$$

Switch the direction of inequality

Add/Sub.	Equality	Mult / Divide
Additive	Inverse	Multiplicative
Additive	Identity	Multiplicative