

## SM2 Lesson 1-4: Properties

Addition Property of Inequality: adding the same number left and right of the “<, >, ≤, or ≥” symbol will result in an equivalent inequality.

$$\begin{array}{r} x - 4 > 7 \\ +4 \quad +4 \\ \hline x > 11 \end{array}$$

Subtraction Property of Inequality: subtracting the same number left and right of the “<, >, ≤, or ≥” symbol will result in an equivalent inequality.

$$\begin{array}{r} x + 5 \leq 2 \\ -5 \quad -5 \\ \hline x \leq -3 \end{array}$$

Multiplication Property of Inequality: multiplying the same positive number left and right of the “<, >, ≤, or ≥” symbol will result in an equivalent inequality. We reverse the direction of <, >, ≥, and ≤ if the factor is negative.

$$\begin{array}{r} -2x \geq 6 \\ *(-\frac{1}{2}) \quad \div -2 \\ \hline x \leq -3 \end{array}$$