Inequalities – Quick Reference

Inequality Symbols

< Less Than
≤ Less Than OR Equal To

> Greater Than
≥ Greater Than or Equal To

Graphing Inequalities in One Variable

Graphing Symbols

Greater Than (The open circle indicates that this is **NOT Equal to** the numeral graphed.

Greater Than or Equal To (The closed circle indicates that this is **Equal to** the numeral graphed.

Less Than (The open circle indicates that this is **NOT Equal to** the numeral graphed.

Less Than or Equal To (The closed circle indicates that this is **Equal to** the numeral graphed.

Special Rule - Just for Inequalities

Whenever you **multiply or divide** by a **negative** number, you **MUST reverse** the sign.

Example

$-3x < 9$

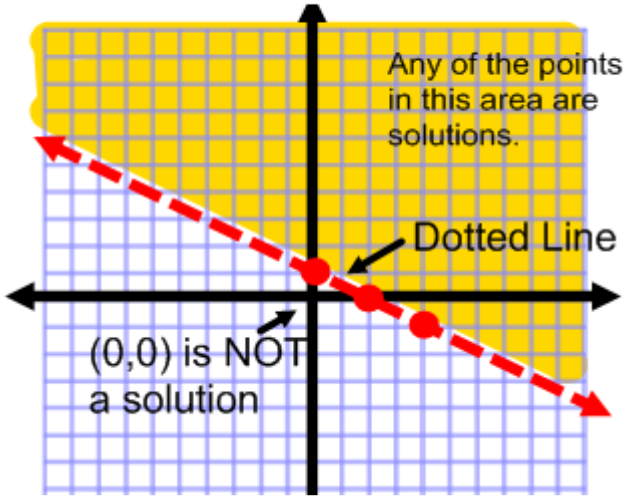
Divide by a negative 3 → $\frac{-3x}{-3} < \frac{9}{-3}$ → Reverse the sign

$x > -3$

Graphing Inequalities in Two Variables

Graph for: **$y > -1/2x + 1$**

1. Graph $y = -1/2x + 1$, but dot the line since the symbol is >. The points on the line are **not** solutions.
2. Pick a point such as (0,0) and substitute it into the inequality. (0,0) is **not** a solution, therefore, shade the side of the line that does not contain (0,0).



Systems of Inequalities

Graph each inequality as shown above. **ONLY** the area that is shaded by **BOTH** inequalities is the solution set (orange section)