

Notes for Graphing Inequalities in Two Variables

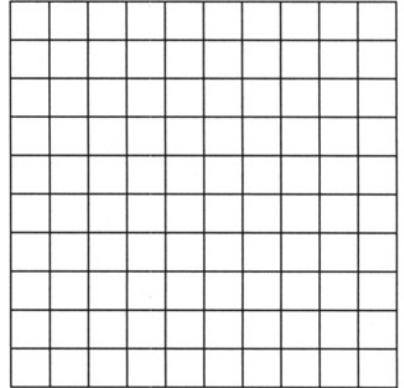
Graphing a linear inequality is similar to graphing a linear equation.
To help, remember how to solve and graph a linear inequality in one variable.

Try these examples (Solve for “y” and make a table):

Graph

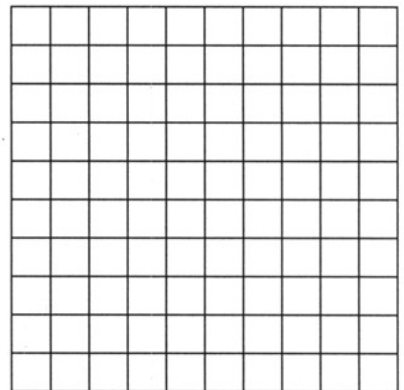
1) $y - 2x = 1$

X	Y =



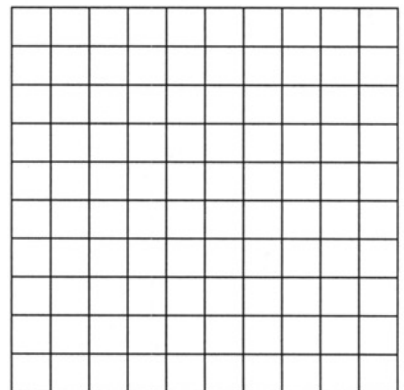
2) $y - 2x \geq 1$

X	Y \geq



3) $-y - 2x > 1$

X	Y <



Notes: Relating Inequalities with Their Graphs

Needs for Graphing Inequalities in Two Variables:	Steps:
Boundary Line	Get inequality to look like the slope-intercept form ($y = mx + b$): This becomes the boundary line.
Solid or Dashed	Look at the inequality symbol: <div style="display: flex; justify-content: space-between; padding: 5px;"> ✓ Solid if the inequality symbol <i>includes an equal</i> </div> <div style="display: flex; justify-content: space-between; padding: 5px;"> ✓ Dashed if it does <i>not include the equal</i> </div>
Half Plane	Look at the inequality symbol:
Which side of the boundary line is shaded?	If the inequality symbol <i>is less than</i> , then the <i>shaded region is on the negative side</i> of boundary line. If the inequality symbol <i>is greater than</i> , then the <i>shaded region is on the positive side</i> of boundary line.

<h3 style="margin: 0;">Example</h3> <p style="margin: 10px 0;">$2x + y > 1$</p>	
Boundary Line	Get inequality to look like the slope-intercept form ($y = mx + b$): Inequality Becomes... $y > -2x + 1$
Solid or Dashed	✓ Dashed Does <i>not include the equal</i>
Half Plane	Look at the inequality symbol:
Which side of the boundary line is shaded?	✓ <i>Is greater than</i> , the <i>shaded region is on the positive side</i>