

Section 6.8 Graphing Inequalities

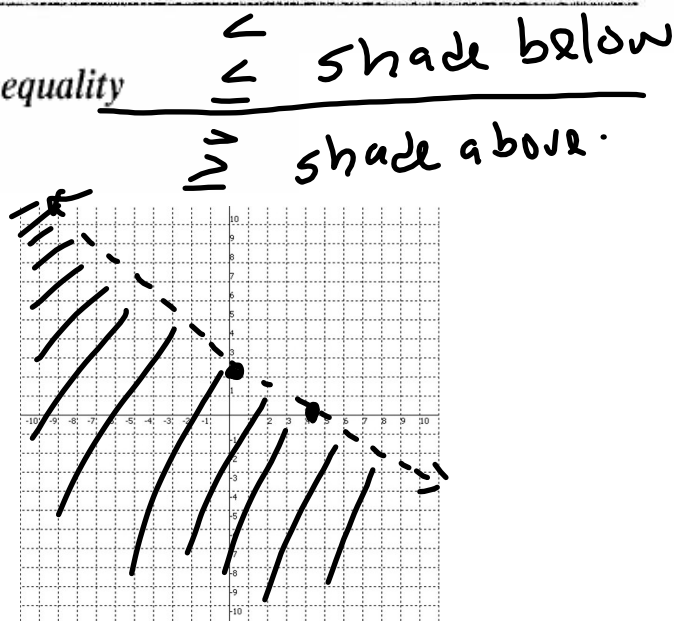
TO GRAPH LINEAR INEQUALITIES IN TWO VARIABLES

1. Mentally substitute the equal sign for the inequality sign and plot points as if you were graphing the equation.
2. If the inequality is $<$ or $>$, draw a dashed line through the points. If the inequality is \leq or \geq , draw a solid line through the points.
3. Select a test point not on the line and substitute the x - and y -coordinates into the inequality. If the substitution results in a true statement, shade in the area on the same side of the line as the test point. If the test point results in a false statement, shade in the area on the opposite side of the line as the test point.

EXAMPLE 1 Graphing an Inequality

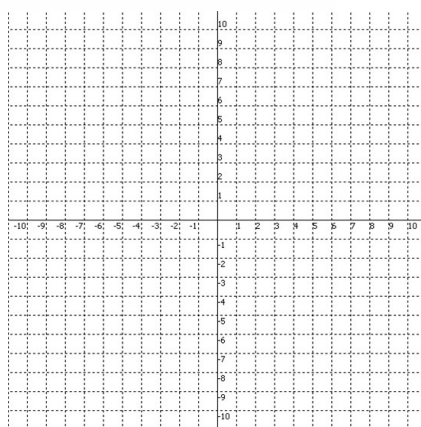
Draw the graph of $x + 2y < 4$.

$x = 4$
 $y = 2$



EXAMPLE 1 *Graphing an Inequality*

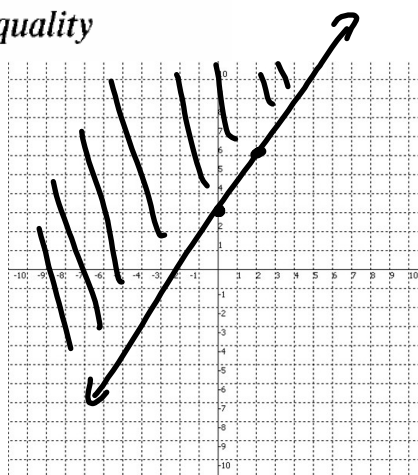
Draw the graph of $x + 2y < 4$.



EXAMPLE 2 *Graphing an Inequality*

Draw the graph of $3x - 2y \leq -6$.

$$\begin{aligned} -\frac{1}{2}2y &\leq \frac{-3}{-2}x - \frac{-6}{-2} \\ y &\geq \frac{3}{2}x + 3 \end{aligned}$$

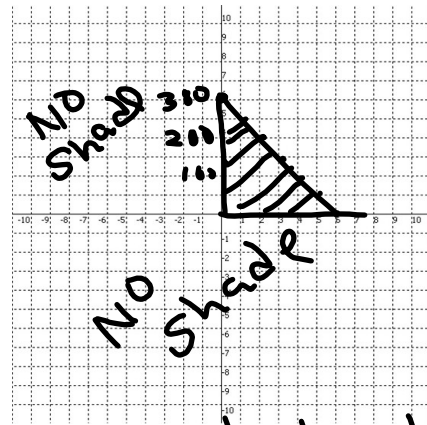


PROBLEM SOLVING

29. *Gas Grills* A manufacturer of gas grills must produce and ship x gas grills to one store and y gas grills to a second store. The maximum number of gas grills the manufacturer can produce and ship is 300.

- a) Write an inequality in two variables that represents this problem.
- b) Graph the inequality.

a) $x + y \leq 300$
 $y \leq -x + 300$
 $\frac{-1}{1} = \frac{-300}{300}$



Did you look at my website

Evan
 AJ
 Tara
 Lani
 Ruben

30. *Buying CDs and DVDs* Reggie Wayne is allowed to spend a maximum of \$100 for purchasing x DVDs and y CDs. Each DVD costs \$20, and each CD costs \$10.

- a) State this problem as an inequality in two variables.
- b) Graph the inequality.

$20x + 10y \leq 100$
 $y \leq -2x + 10$

