

Name: _____

Sec. 6.7: Graph Linear Inequalities in Two Variables

Linear inequality in two variables: similar to a linear equation, with the _____ sign replaced by an _____ symbol

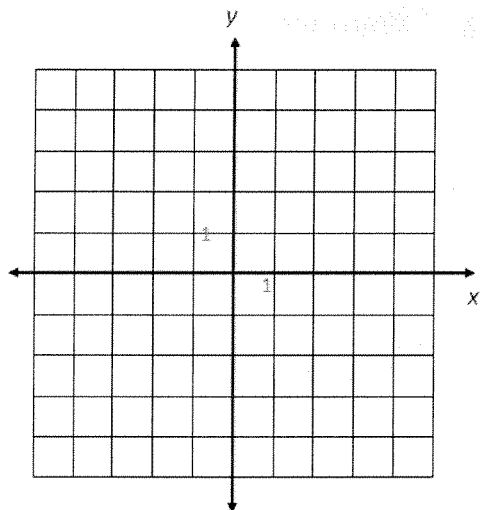
Graphing a linear inequality:

- Determine if the boundary line should be solid or dashed (_____ for \leq or \geq , _____ for $<$ or $>$).
- Test a point that is not on the _____ line to see if it is a solution of the inequality.
- If the test point is a solution of the inequality, shade the half-plane that _____ that point. If it is not a solution, shade the half-plane on the other side of the boundary line.

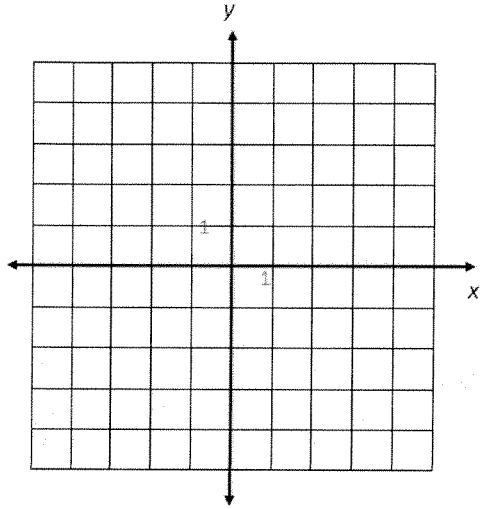
Examples

1. Tell whether $(0, 0)$ is a solution of $y < 3x + 5$.

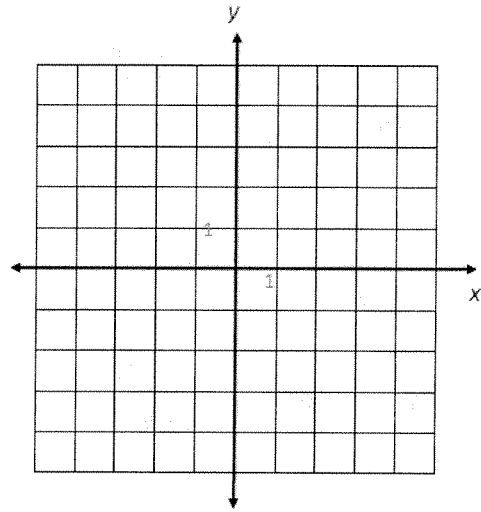
2. Graph the inequality $y < 3x + 5$.



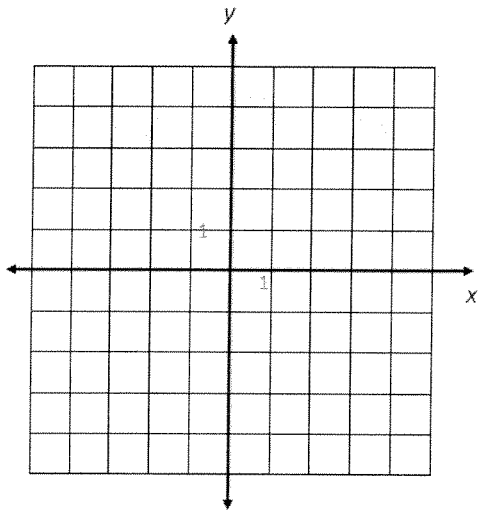
3. Graph the inequality $x \leq 4$.



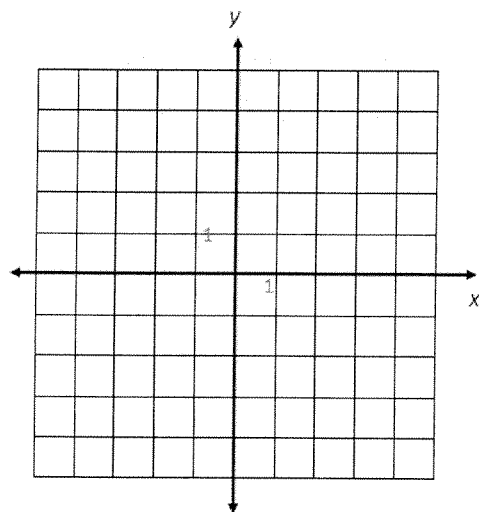
4. Graph the inequality $y > -3$.



5. Graph the inequality $2x \geq 4y + 12$.



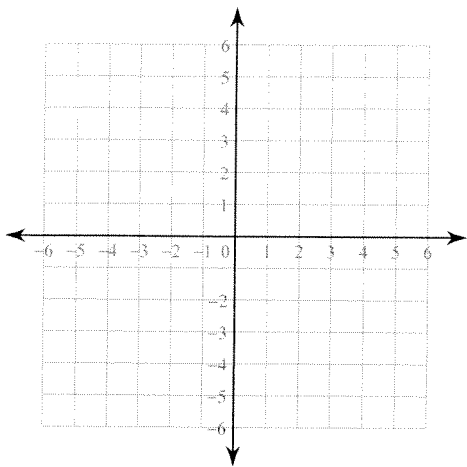
6. Graph the inequality $3x + 4y > 12$.



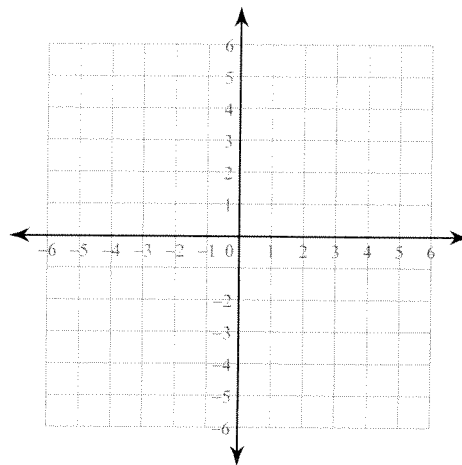
Sec. 6.7 Practice Problems

Sketch the graph of each linear inequality.

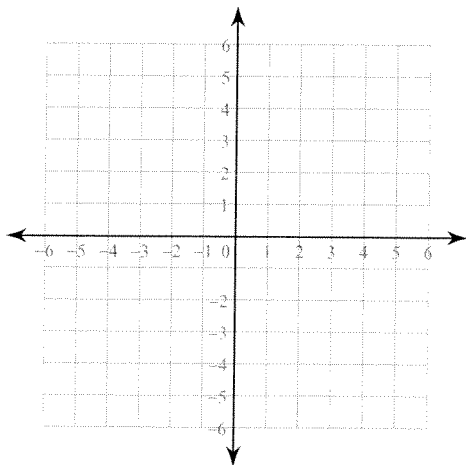
1) $y \leq \frac{6}{5}x - 5$



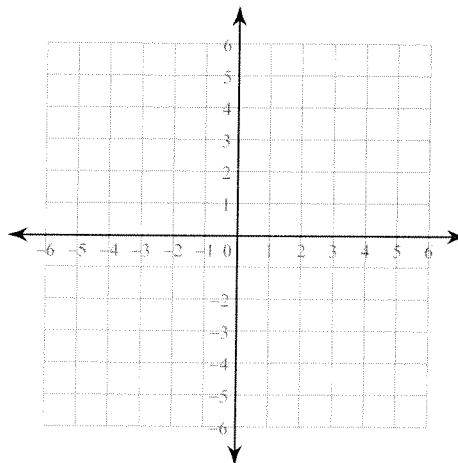
2) $y > -3x + 2$



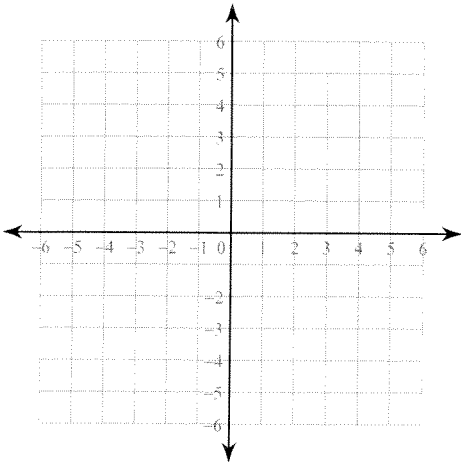
3) $y < 1$



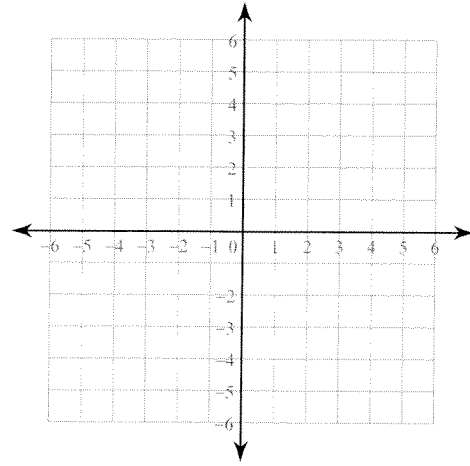
4) $y > x + 3$



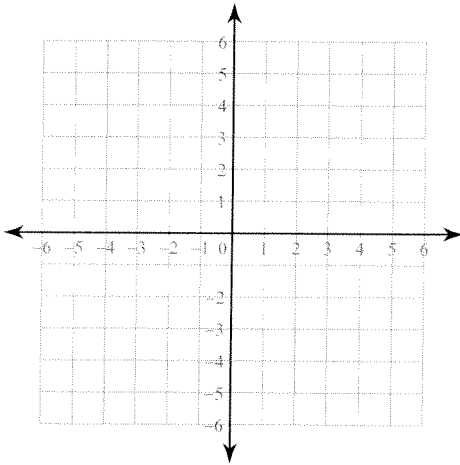
5) $y > -x + 2$



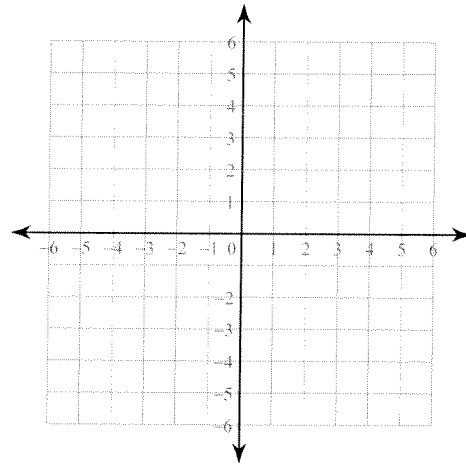
6) $y > -\frac{1}{4}x - 5$



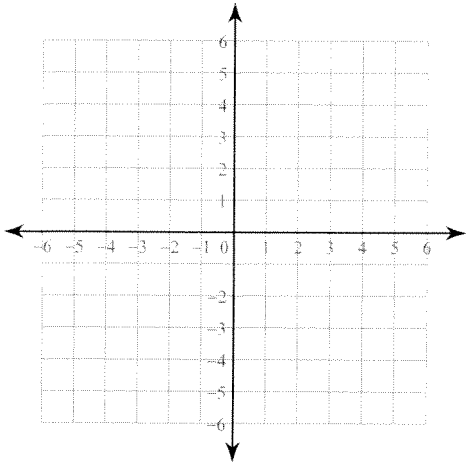
7) $y \geq 6x - 4$



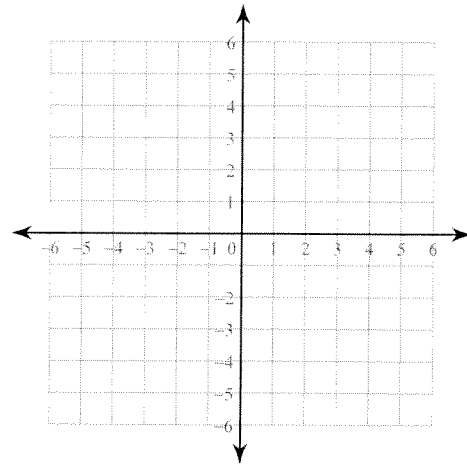
8) $y < x$



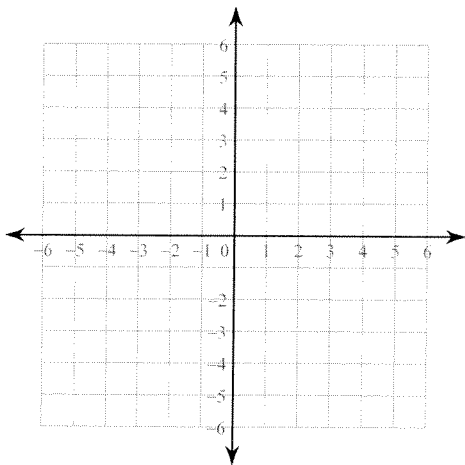
9) $3x + y < -3$



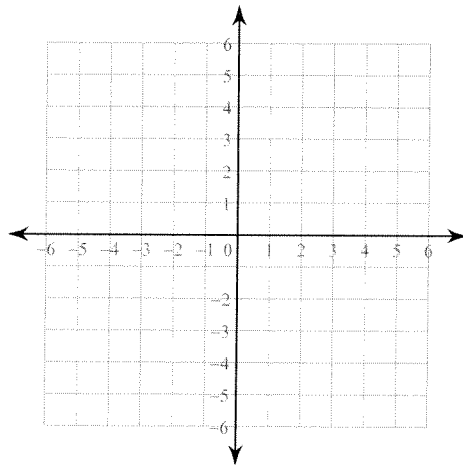
10) $x + 2y < 0$



11) $x < 2$



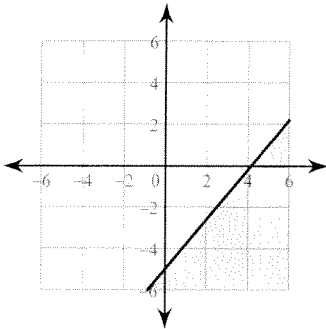
12) $x + y > -1$



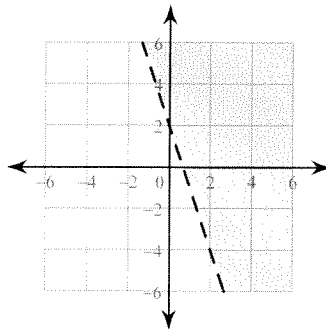
- 13) 13. Mary wants to buy some CDs, which cost \$12 each, and some DVDs, which cost \$18 each. She can spend a maximum of \$90 total. Write an inequality that describes the number of CDs and DVDs that she can buy.

Answers to Sec. 6.7 Practice Problems

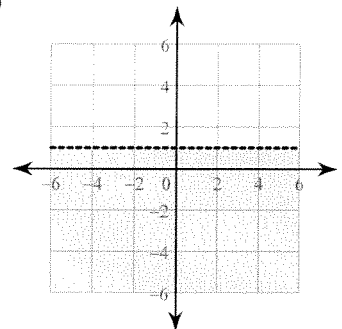
1)



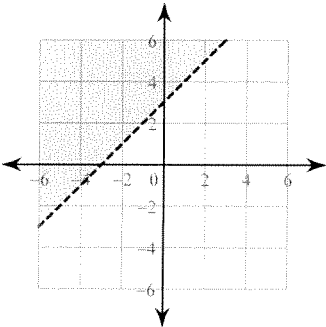
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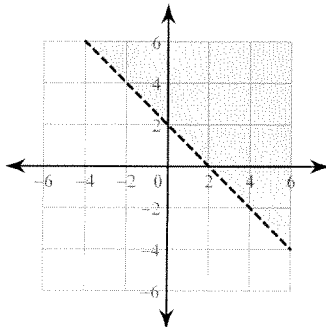
3)



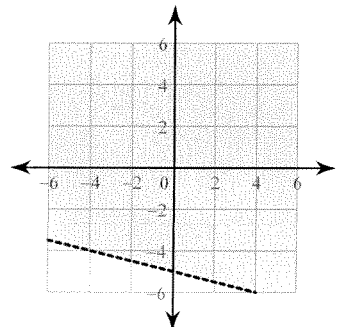
4)



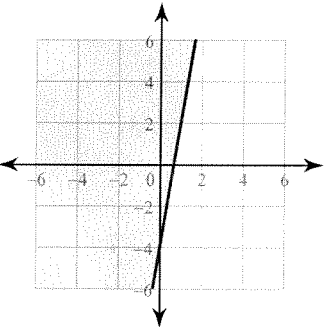
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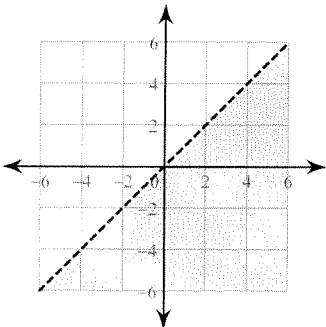
6)



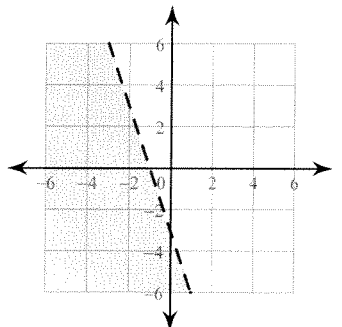
7)



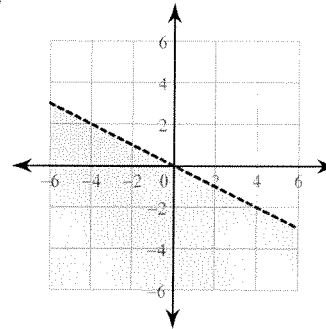
8)



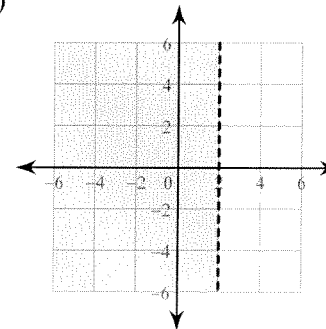
9)



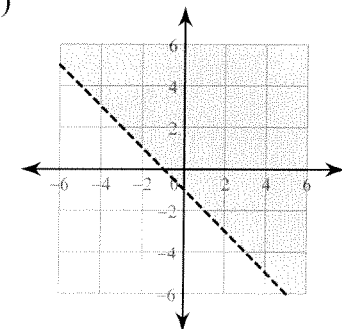
10)



11)



12)



13) $12C + 18D \leq 90$