

Name: \_\_\_\_\_

## Sec. 7.6: Solve Systems of Linear Inequalities

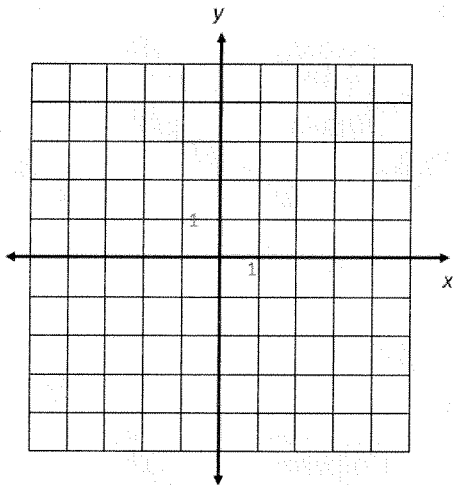
To find the solution to a system of linear inequalities:

- Graph each inequality.
- Find the intersection of the half-planes.

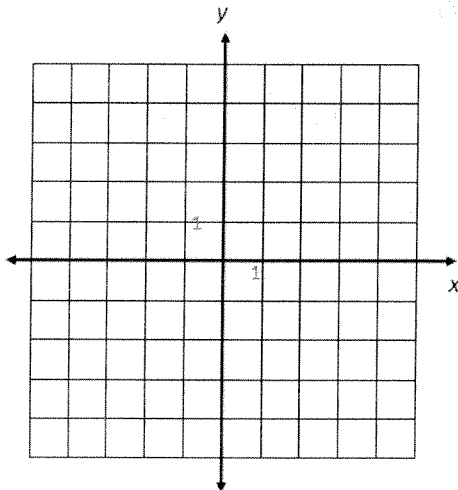
### Examples

Sketch the solution to each system of inequalities.

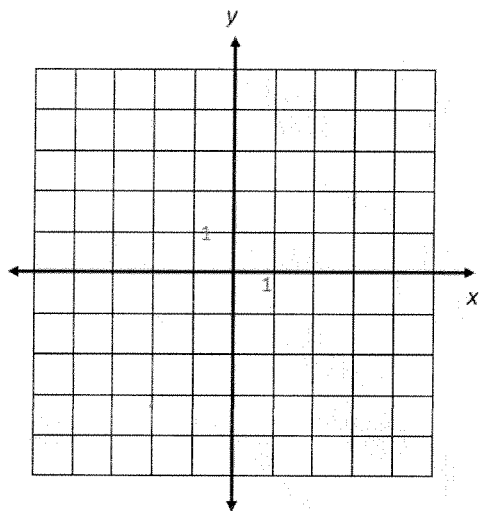
1.  $y < -\frac{1}{2}x + 2$   
 $y \geq 2x - 3$



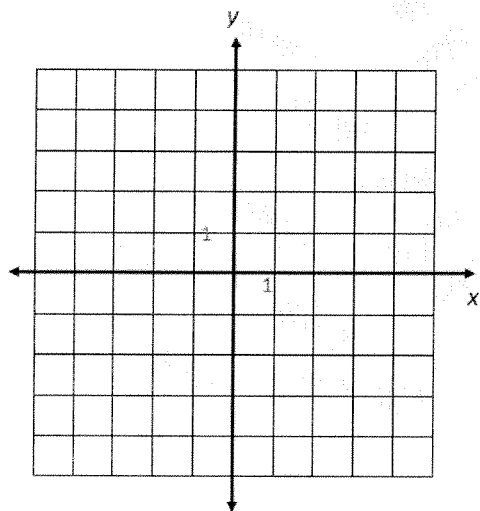
2.  $y > 3x - 1$   
 $y \geq 3x + 2$



3.  $y \geq 2x + 3$   
 $y \leq 2x + 2$



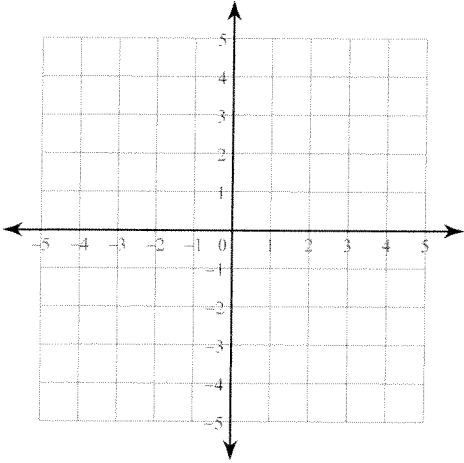
4.  $2x - 3y \geq 9$   
 $2x + 3y \leq 3$



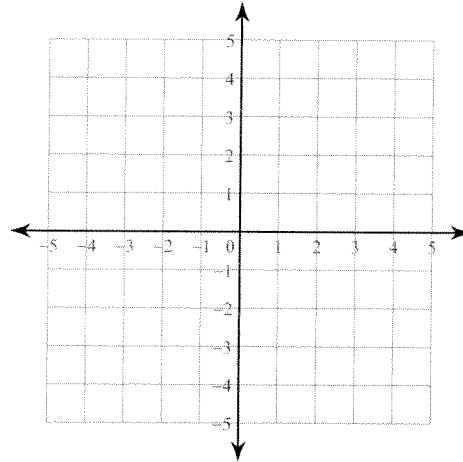
## Sec. 7.6 Practice Problems

Sketch the solution to each system of inequalities.

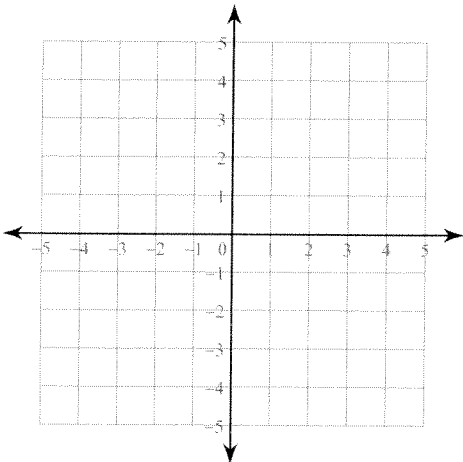
$$1) \begin{aligned} y &\leq -4x - 1 \\ y &\leq -x + 2 \end{aligned}$$



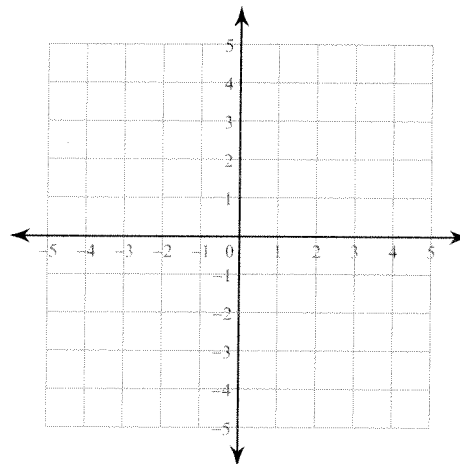
$$2) \begin{aligned} y &\geq -x - 2 \\ y &> \frac{2}{3}x + 3 \end{aligned}$$



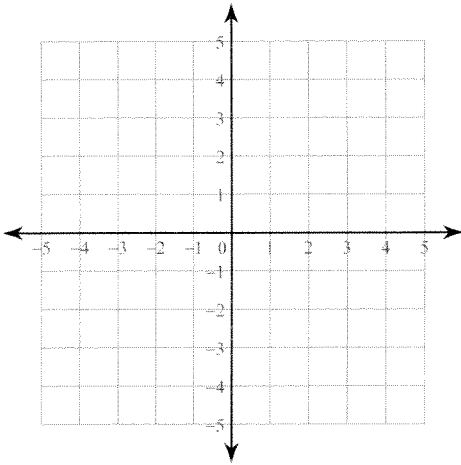
$$3) \begin{aligned} y &\geq -x + 1 \\ y &\geq -x + 2 \end{aligned}$$



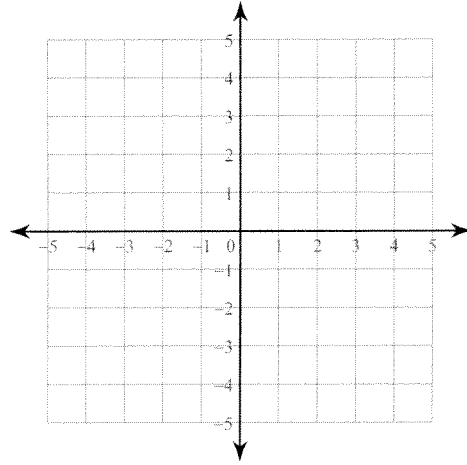
$$4) \begin{aligned} y &< -4x - 2 \\ y &> -x + 1 \end{aligned}$$



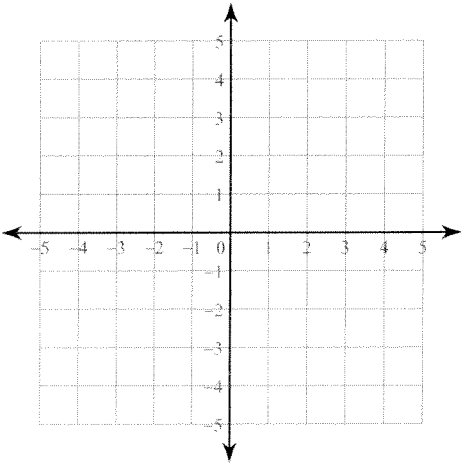
$$5) \begin{aligned} y &> -x - 1 \\ y &\geq -x + 2 \end{aligned}$$



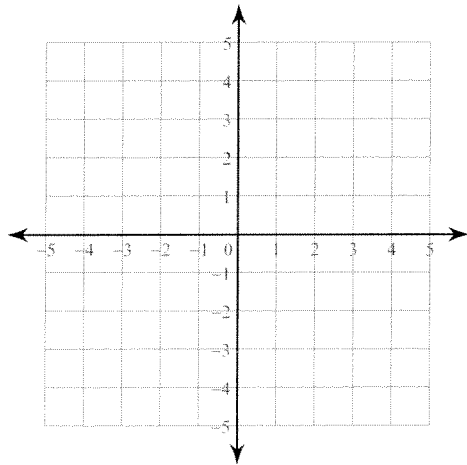
$$6) \begin{aligned} y &> 5x - 2 \\ y &> x + 2 \end{aligned}$$



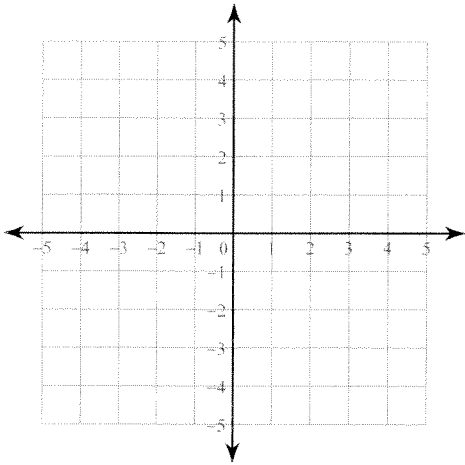
$$7) \begin{aligned} y &> -\frac{5}{3}x + 3 \\ x &\leq 3 \end{aligned}$$



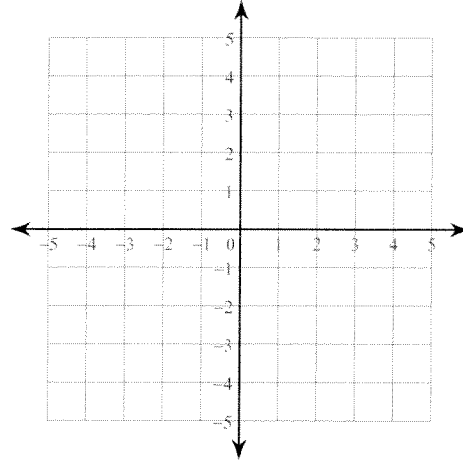
$$8) \begin{aligned} y &\leq -\frac{5}{2}x - 3 \\ y &\geq -\frac{5}{2}x - 2 \end{aligned}$$



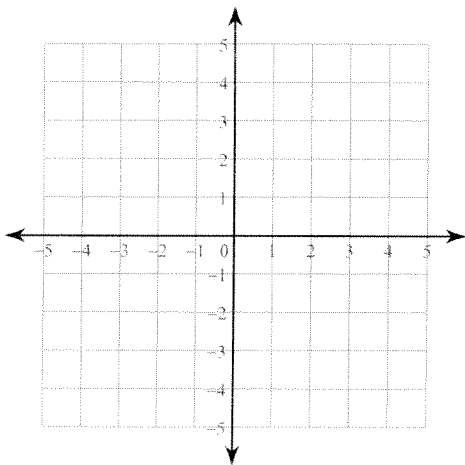
9)  $y < 2$   
 $y < 3x - 1$



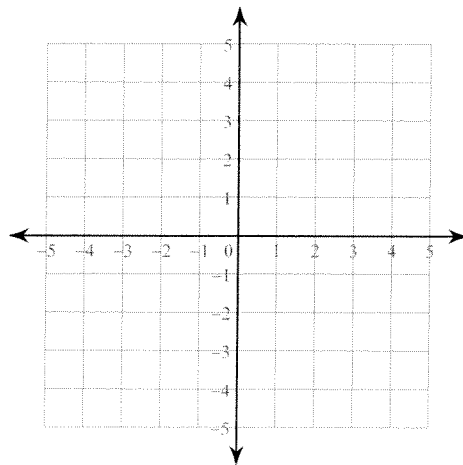
10)  $y \geq \frac{5}{3}x - 2$   
 $y < \frac{5}{3}x + 1$



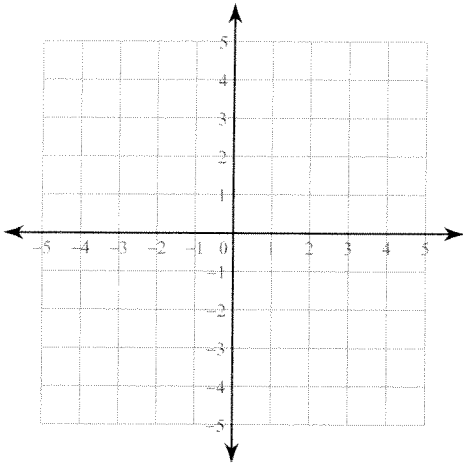
11)  $2x + y \geq 1$   
 $y < -1$



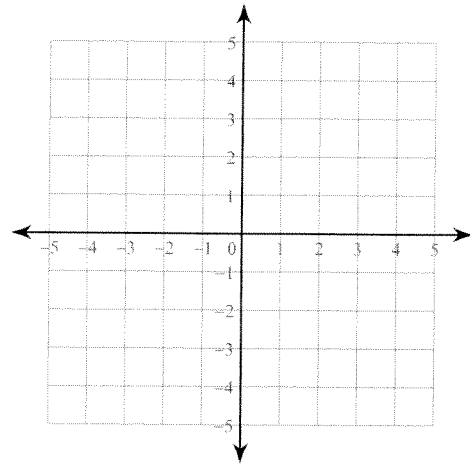
12)  $x + 2y < 4$   
 $3x + y \geq -3$



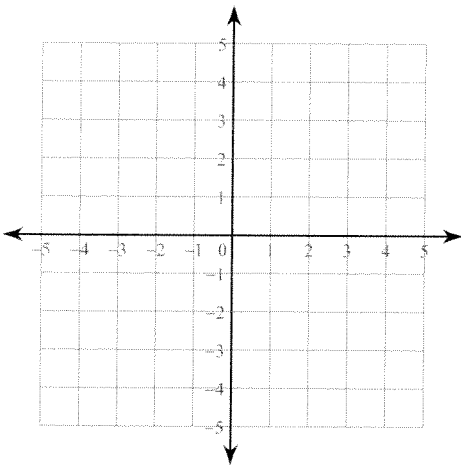
13)  $4x + y > -1$   
 $4x + y \geq -3$



14)  $x - y > -3$   
 $x + y \leq -1$

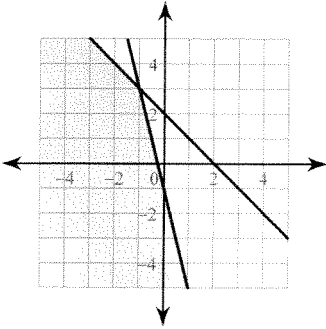


15)  $x - y < 2$   
 $4x - y \geq -1$

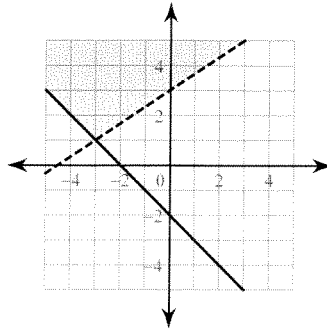


# Answers to Sec. 7.6 Practice Problems

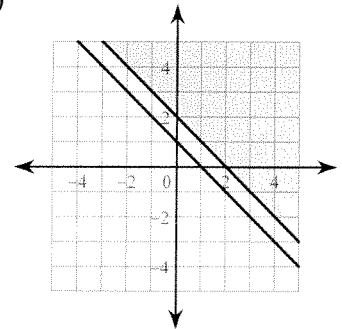
1)



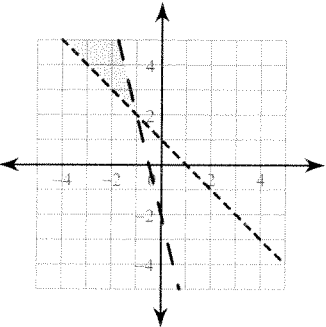
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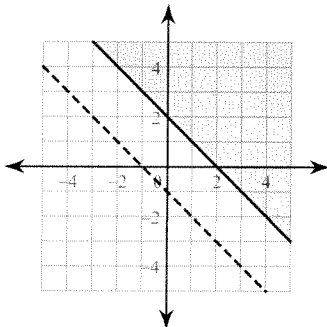
3)



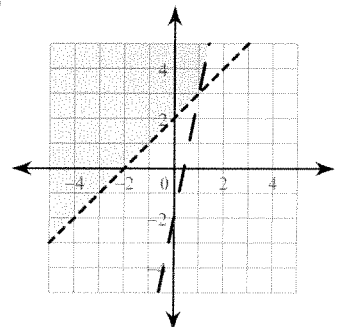
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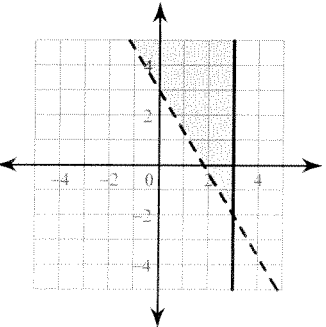
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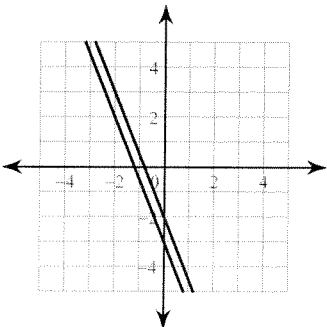
6)



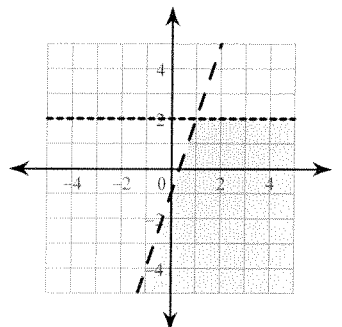
7)



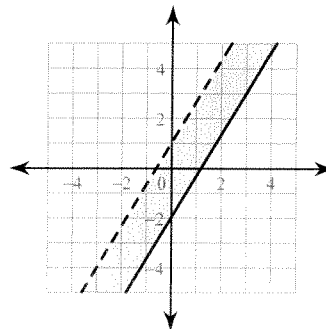
8)



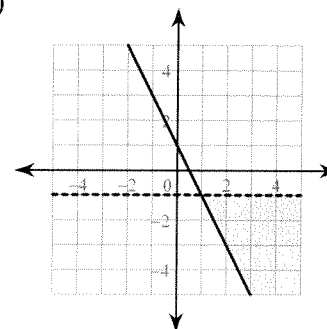
9)



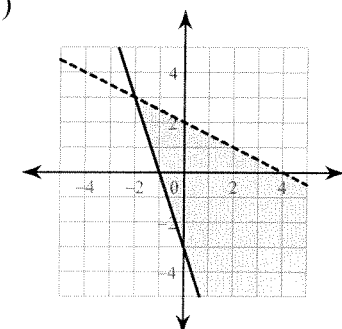
10)



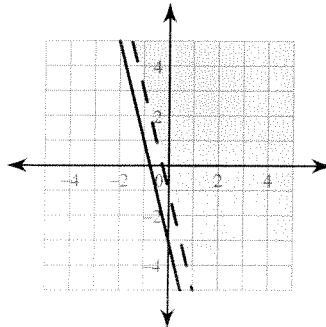
11)



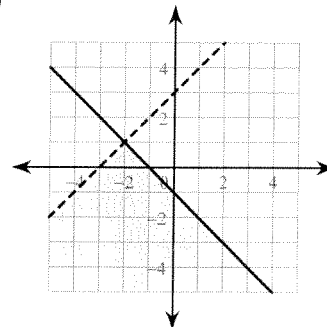
12)



13)



14)



15)

