NAME _____

DATE _____

Module 10 Solving Systems of Linear Equations and Inequalities

Lesson 4 Solving Systems of Linear Inequalities by Graphing

independent practice

Is the given point a solution to the system of inequalities? Show all work.
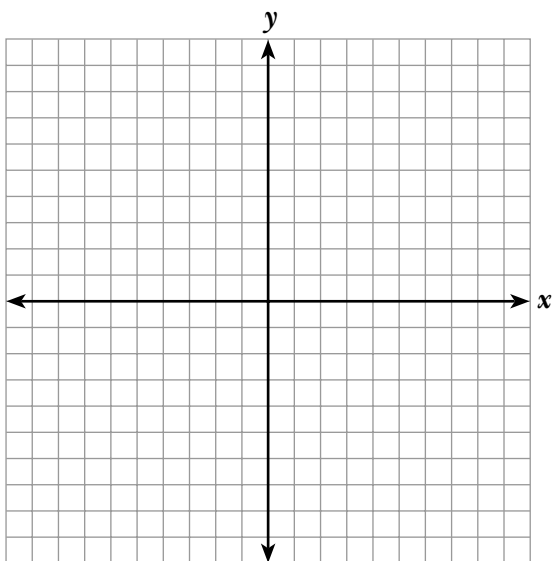
1. (0, 7) $\begin{cases} x \leq 6 \\ y > -3 \end{cases}$

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2. (5, 9) $\begin{cases} x < -5 \\ 2x \geq 5y \end{cases}$

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3. (−1, −1) $\begin{cases} x + 3y \leq -3 \\ x + y > 3 \end{cases}$
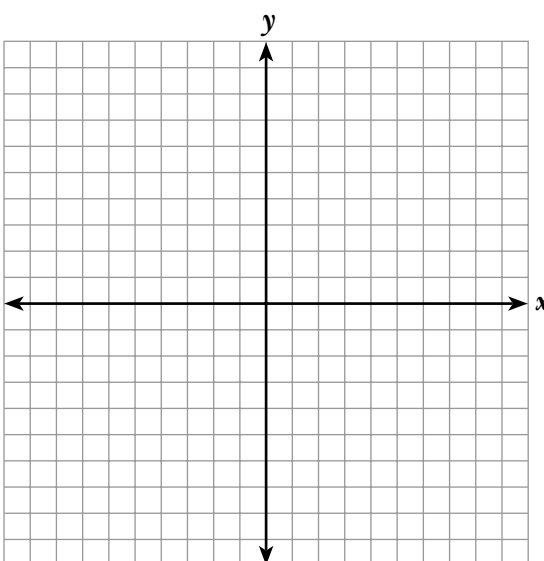
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4. (4, −9) $\begin{cases} -2x \leq y \\ 3x - 2y \geq 30 \end{cases}$

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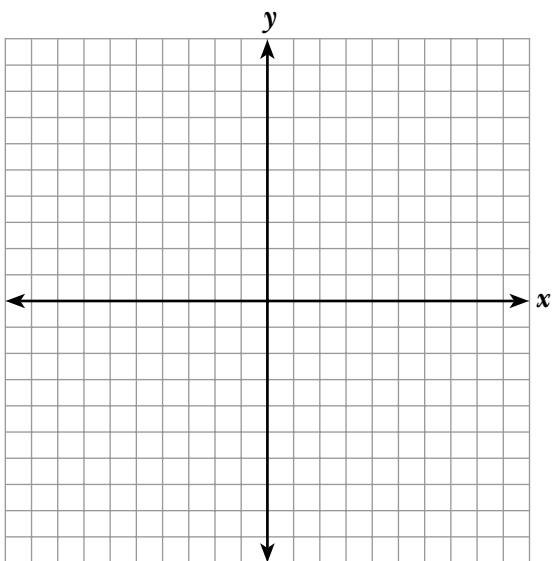**Graph the solution set for each system of linear inequalities.**
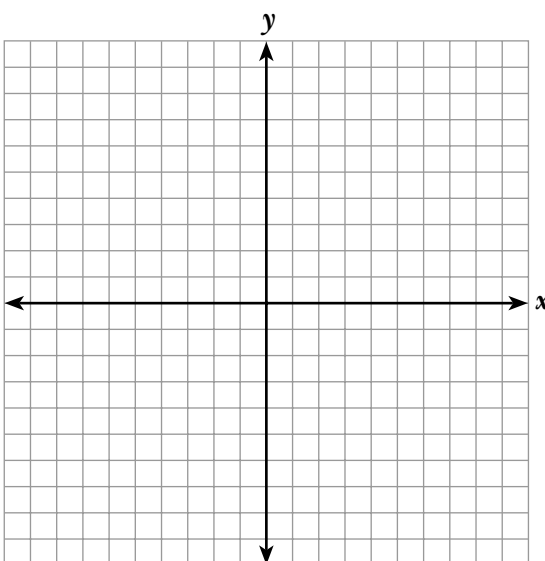
5. $\begin{cases} y \leq 2 \\ x \leq -4 \end{cases}$

6. $\begin{cases} x \geq -3 \\ y < -2x - 3 \end{cases}$

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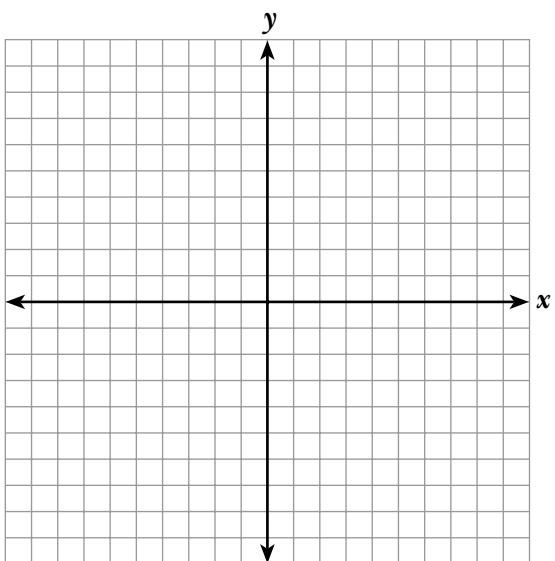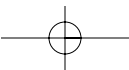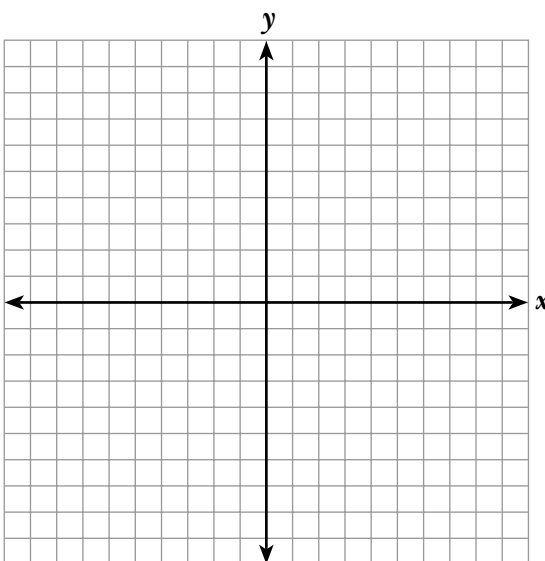**7.** $\begin{cases} y \leq 4 \\ y > 2x + 1 \end{cases}$

8. $\begin{cases} y \geq 2x - 1 \\ x > 1 \end{cases}$
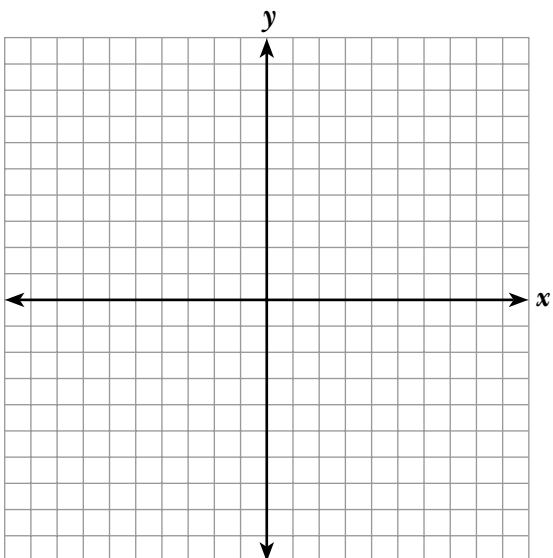
9. $\begin{cases} x \leq 2 \\ y \geq -4 \\ y \leq x + 2 \end{cases}$

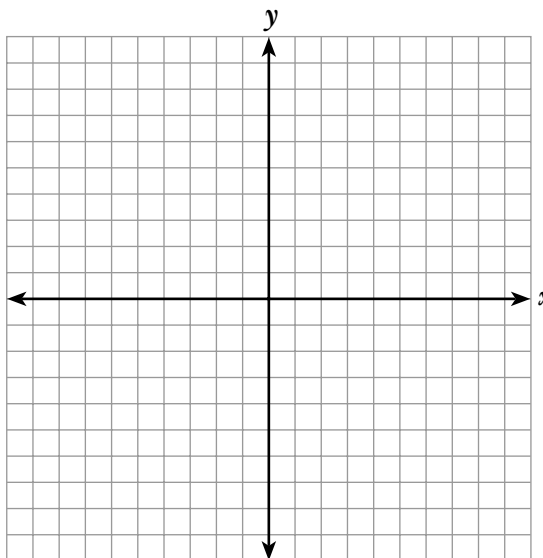**10.** $\begin{cases} x < 5 \\ y < 3 \\ x + y > 6 \end{cases}$

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11. $\begin{cases} y \geq -3 \\ x \geq 4 \\ 3x + 4y \leq 16 \end{cases}$

12. $\begin{cases} y \geq 2 \\ y < x + 1 \end{cases}$

y

x

y

x

Solve.

13. Find the greatest pair of consecutive even integers whose sum is less than 159.

14. Madison's last four test grades were 75, 78, 84, and 79. What is the lowest grade she can have on the next test to have an average of at least 80?

Journal

1. What ordered pair is usually the easiest to use as a test point? Explain your answer.
2. When would using the origin as a test point NOT be a good idea? How do you select a test point when the origin cannot be used at the test point?
3. What do a solid boundary line and a dashed boundary line indicate about the solution set of a system of inequalities?
4. Describe how to determine the solutions to a system of inequalities by looking at the graph of that system.
5. Why is it important to shade lightly when graphing a system of linear inequalities?

Cumulative Review

Solve each inequality.

1. $x + 5 \leq 12$ _____

2. $5x - 3 > 17$ _____

3. $7 - m < 11$ _____

4. $3 - y \leq 2$ _____

5. $6(x - 1) > 18$ _____

6. $-2(r - 7) < 15$ _____

7. $-8 \leq x + 2 \leq 5$ _____

8. $-16 < 8n \leq 32$ _____

9. $-45 < t - 6 < 90$ _____

10. $15 \geq 1 - 2d > -17$ _____

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