Practice

Systems of Linear Inequalities

Solve each system of inequalities by graphing.

1. $3x + y \le 1$
$x - y \le 3$

2. $5x - y \le 1$
$x + 3y \le -2$

3. $4x + 3y \le 1$
$2x - y \le 2$

4. Writing What is the difference between the solution of a system of linear inequalities and the solution of a system of linear equations? Explain.
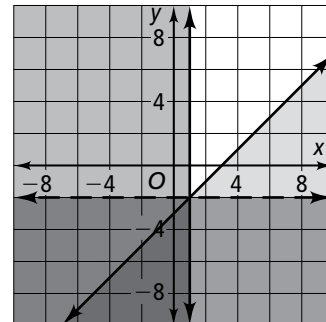
5. Open-Ended When can you say that there is no solution for a system of linear inequalities? Explain your answer and show with a system and graph.

6. Error Analysis A student graphs the system below. Describe and correct the student's error.

$x - y \ge 3$

$y < -2$

$x \ge 1$

Determine whether the ordered pair is a solution of the given system.

7. $(0, 1)$;
$1 - x \ge 3y$
$3y - 1 > 2x$

8. $(-2, 3)$;
$2x + 3y > 2$
$3x + 5y > 1$

9. $(1, 4)$;
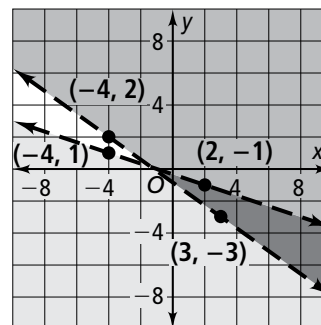$2x + y > 3$
$-3x - y \le 5$

Practice (continued)   *Form G*

Systems of Linear Inequalities

10. Mark is a student, and he can work for at most 20 hours a week. He needs to earn at least $75 to cover his weekly expenses. His dog-walking job pays $5 per hour and his job as a car wash attendant pays $4 per hour. Write a system of inequalities to model the situation, and graph the inequalities.

11. Britney wants to bake at most 10 loaves of bread for a bake sale. She wants to make banana bread that sells for $1.25 each and nut bread that sells for $1.50 each and make at least $24 in sales. Write a system of inequalities for the given situation and graph the inequalities.

12. Write a system of inequalities for the following graph.

Solve each system of inequalities by graphing.

13. $5x + 7y > -6$
$x + 3y < -1$

14. $x + 4y - 2 \geq 0$
$2x - y + 1 > 2$

15. $\frac{x}{2} - 5 > -6y$
$3x + y > 2$