7-3 Exercises

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Homework Help

GUIDED PRACTICE

1. **Vocabulary** A solution of a system of inequalities is a solution of _____?_____ of the inequalities in the system. (*at least one* or *all*)

SEE EXAMPLE 1 **Tell whether the ordered pair is a solution of the given system.**

2. $(0, 0); \begin{cases} y < -x + 3 \\ y < x + 2 \end{cases}$

3. $(0, 0); \begin{cases} y < 3 \\ y > x - 2 \end{cases}$

4. $(1, 0); \begin{cases} y > 3x \\ y \leq x + 1 \end{cases}$

SEE EXAMPLE 2 **Graph each system of linear inequalities. Give two ordered pairs that are solutions and two that are not solutions.**

5. $\begin{cases} y < 2x - 1 \\ y > 2 \end{cases}$

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

7. $\begin{cases} y \geq 3x \\ 3x + y \geq 3 \end{cases}$

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

SEE EXAMPLE 3 **Graph each system of linear inequalities. Describe the solutions.**

9. $\begin{cases} y > 2x + 3 \\ y < 2x \end{cases}$

10. $\begin{cases} y \leq -3x - 1 \\ y \geq -3x + 1 \end{cases}$

11. $\begin{cases} y > 4x - 1 \\ y \leq 4x + 1 \end{cases}$

12. $\begin{cases} y < -x + 3 \\ y > -x + 2 \end{cases}$

13. $\begin{cases} y > 2x - 1 \\ y > 2x - 4 \end{cases}$

14. $\begin{cases} y \leq -3x + 4 \\ y \leq -3x - 3 \end{cases}$

SEE EXAMPLE 4

15. **Business** Sandy makes $2 profit on every cup of lemonade that she sells and $1 on every cupcake that she sells. Sandy wants to sell at least 5 cups of lemonade and at least 5 cupcakes per day. She wants to earn at least $25 per day. Show and describe all the possible combinations of lemonade and cupcakes that Sandy needs to sell to meet her goals. List two possible combinations.

PRACTICE AND PROBLEM SOLVING

Independent Practice

For Exercises	See Example
16–18	1
19–22	2
23–28	3
29	4

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Online Extra Practice

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

16. $(0, 0); \begin{cases} y > -x - 1 \\ y < 2x + 4 \end{cases}$

17. $(0, 0); \begin{cases} x + y < 3 \\ y > 3x - 4 \end{cases}$

18. $(1, 0); \begin{cases} y > 3x \\ y > 3x + 1 \end{cases}$

Graph each system of linear inequalities. Give two ordered pairs that are solutions and two that are not solutions.

19. $\begin{cases} y < -3x - 3 \\ y \geq 0 \end{cases}$

20. $\begin{cases} y < -1 \\ y > 2x - 1 \end{cases}$

21. $\begin{cases} y > 2x + 4 \\ 6x + 2y \geq -2 \end{cases}$

22. $\begin{cases} 9x + 3y \leq 6 \\ y > x \end{cases}$

Graph each system of linear inequalities. Describe the solutions.

23. $\begin{cases} y < 3 \\ y > 5 \end{cases}$

24. $\begin{cases} y < x - 1 \\ y > x - 2 \end{cases}$

25. $\begin{cases} x \geq 2 \\ x \leq 2 \end{cases}$

26. $\begin{cases} y > -4x - 3 \\ y < -4x + 2 \end{cases}$

27. $\begin{cases} y > -1 \\ y > 2 \end{cases}$

28. $\begin{cases} y \leq 2x + 1 \\ y \leq 2x - 4 \end{cases}$