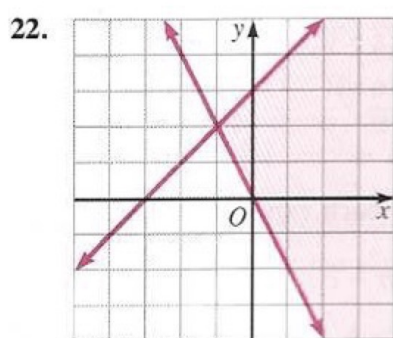
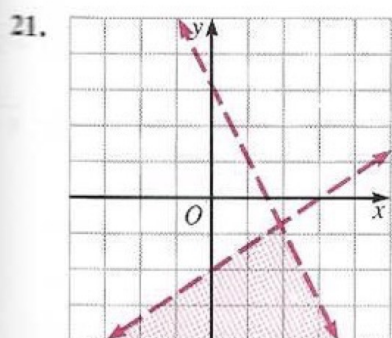
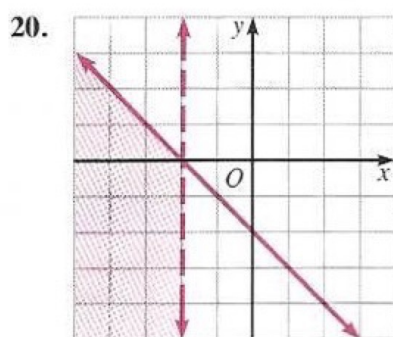
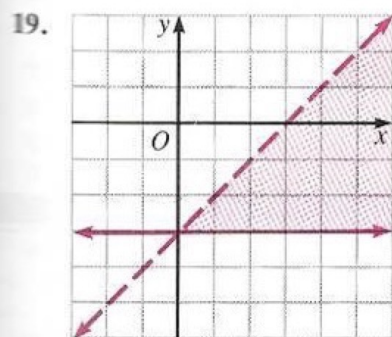
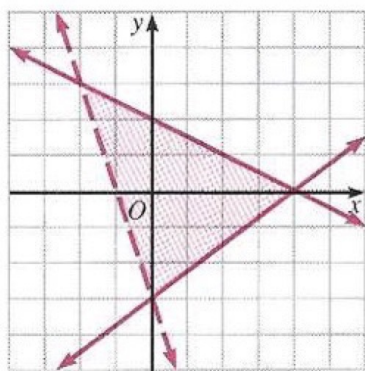


Write a system of linear inequalities whose solution set is shown by the shaded region in each graph.



**Sample**

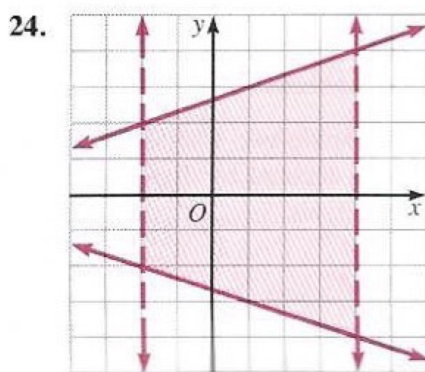
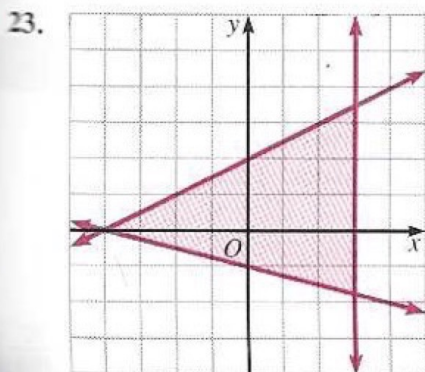


**Solution**

$$y \geq \frac{3}{4}x - 3$$

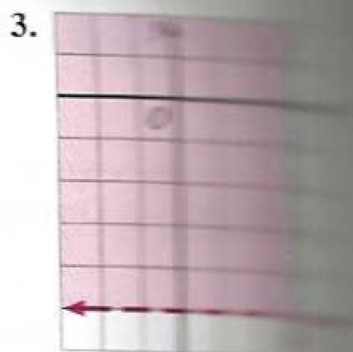
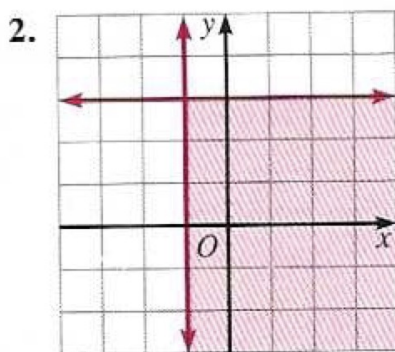
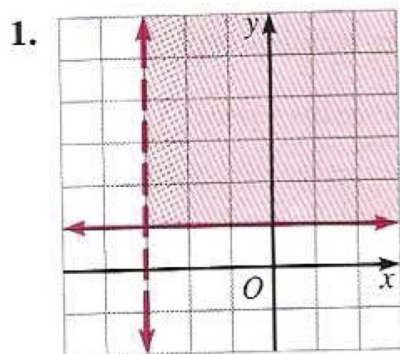
$$y > -3x - 3$$

$$y \leq -\frac{1}{2}x + 2$$



## Oral Exercises

Give a system of two linear inequalities whose solution set is shown by the shaded region in each graph.



State whether or not each ordered pair is a solution of the system:  $y \geq 4$  and  $x < 5$ .

- |           |            |            |            |             |
|-----------|------------|------------|------------|-------------|
| 4. (0, 0) | 5. (5, 4)  | 6. (4, 4)  | 7. (-2, 4) | 8. (-2, -4) |
| 9. (4, 5) | 10. (5, 9) | 11. (4, 3) | 12. (0, 8) | 13. (0, 4)  |

State whether each point belongs to the graph of the solution set of the system:  $y \leq 2$  and  $x - y \leq 5$ .

- |             |            |             |              |             |
|-------------|------------|-------------|--------------|-------------|
| 14. (0, -5) | 15. (8, 2) | 16. (-8, 2) | 17. (-8, 3)  | 18. (0, 2)  |
| 19. (0, 0)  | 20. (7, 2) | 21. (0, -6) | 22. (-4, -5) | 23. (-9, 2) |

## Written Exercises

Graph each pair of inequalities and indicate the solution set of the system with crosshatching or shading.

- |          |                                      |                                      |                                   |                                       |
|----------|--------------------------------------|--------------------------------------|-----------------------------------|---------------------------------------|
| <b>A</b> | 1. $y < 0$<br>$x \leq 0$             | 2. $y \leq 5$<br>$x \geq 1$          | 3. $y > 3$<br>$x < -2$            | 4. $y < -4$<br>$x > 4$                |
|          | 5. $x < y$<br>$y > 2$                | 6. $y > 3x$<br>$x < 1$               | 7. $x \leq 3$<br>$y > 5 - x$      | 8. $x > -2$<br>$y \leq 2x + 7$        |
|          | 9. $y \leq x + 1$<br>$y \geq 2 - x$  | 10. $y < 4x + 4$<br>$y > -4x + 4$    | 11. $y > 2x - 3$<br>$y < 2x + 6$  | 12. $y < 5x + 3$<br>$y > 5 - 5x$      |
| <b>B</b> | 13. $x - y \geq 4$<br>$x + y \leq 6$ | 14. $x + y \geq 5$<br>$x - 2y > 8$   | 15. $3x - y > -1$<br>$x - y > -4$ | 18. $2x - 5y > 0$<br>$x - 4y \leq -8$ |
|          | 16. $x - y < 7$<br>$x - 3y > 15$     | 17. $3x - 4y < -12$<br>$3x + 4y > 0$ |                                   |                                       |