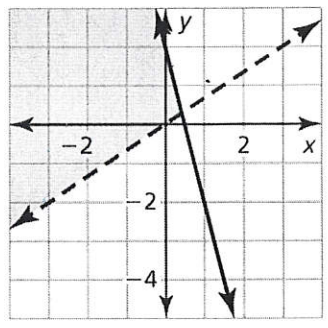


### 5.7 Systems of Linear Inequalities ws

In Exercises 1–4, tell whether the ordered pair is a solution of the system of linear inequalities.



- 1.  $(-2, 1)$  *yes*
- 2.  $(-3, -2)$  *No*
- 3.  $(0, 2)$  *yes*
- 4.  $(-1, -4)$  *No*

In Exercises 5 and 6, tell whether the ordered pair is a solution of the system of linear inequalities.

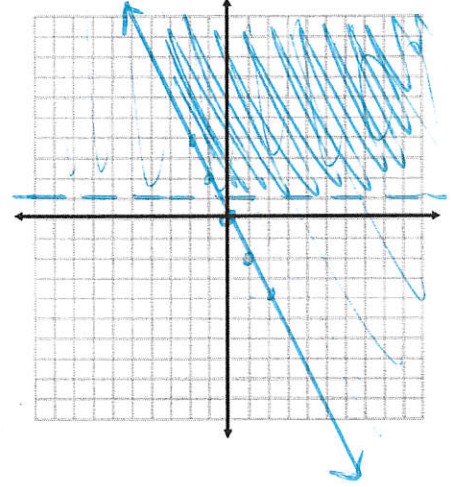
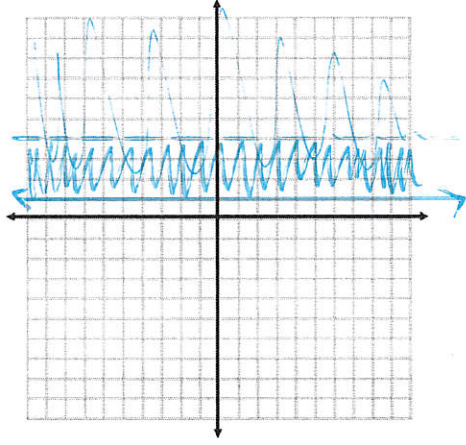
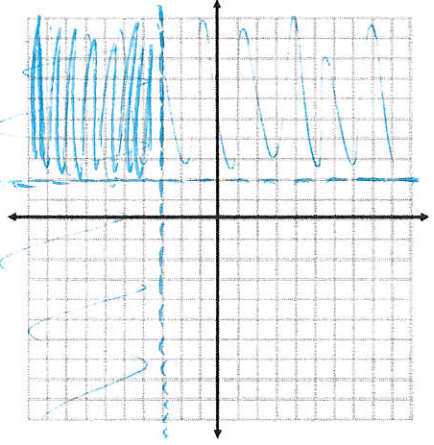
- 5.  $(2, -1); y \geq 3$  *-1 > 3 x*  
 $y < x + 1$  *NO*
- 6.  $(7, -4); y < 0$  *-4 < 0 ✓*  
 $y < x - 3$  *yes*  $-4 < 7 - 3$  *-4 < 4 ✓*

In Exercises 7–12, graph the system of linear inequalities.

7.  $y > 2$   
 $x < -3$

8.  $y \geq 1$   
 $y < 4$

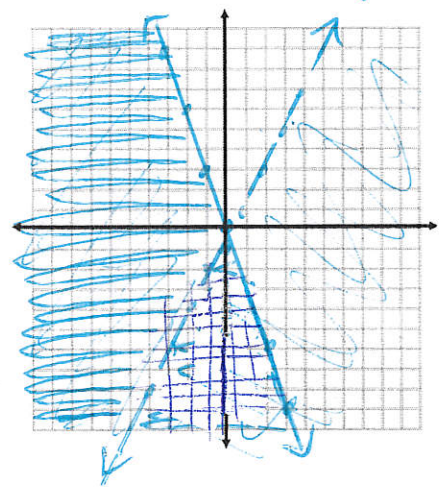
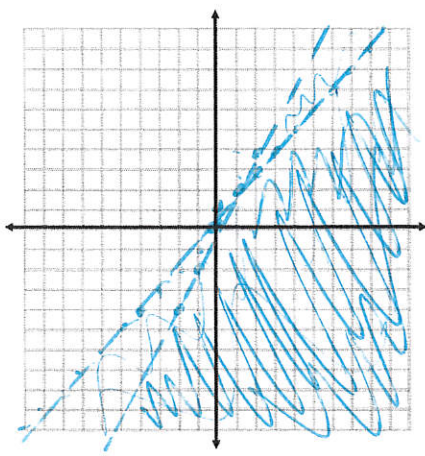
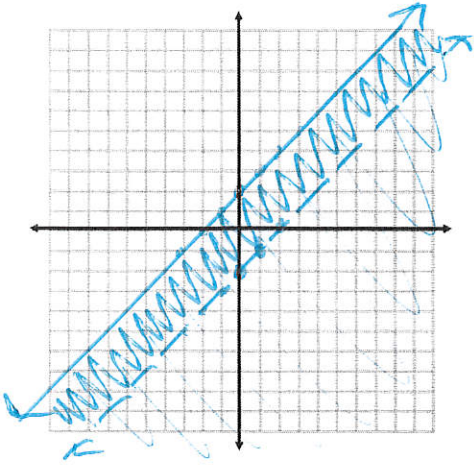
9.  $y \geq -2x$   
 $y > 1$



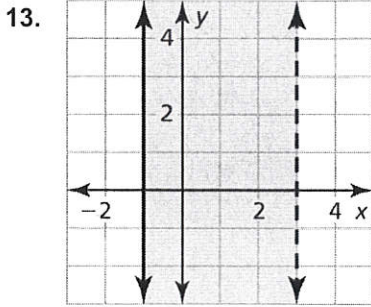
10.  $y \leq x + 2$   
 $y > x - 2$

11.  $y < 2x$   
 $y < x + 1$

12.  $3x + y \leq 0$  *y ≤ -3x*  
 $-2x + y > -1$  *y > 2x - 1*

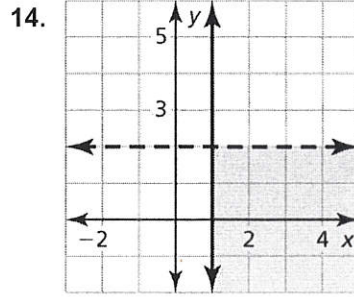


In Exercises 13 - 15, write a system of linear inequalities represented by the graph.



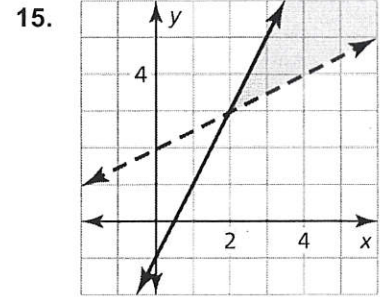
$$x \geq -1$$

$$x < 3$$



$$x < 2$$

$$y \geq 1$$



$$y > \frac{1}{2}x + 2$$

$$y \leq 2x - 1$$

16. You can spend at most \$18 on beads. A bag containing red beads costs \$2 per bag. A bag containing blue beads costs \$3 per bag. You need more bags of blue beads than bags of red beads.

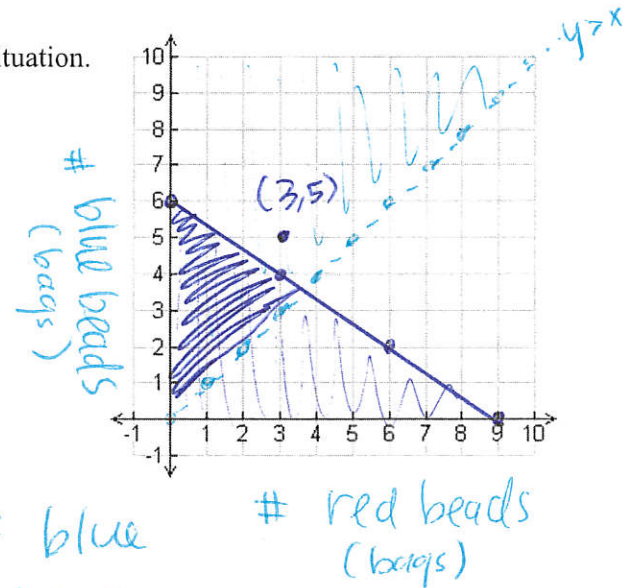
a. Write and graph a system of linear inequalities that represents the situation.

$$2x + 3y \leq 18$$

$$3y \leq -2x + 18$$

$$y \leq -\frac{2}{3}x + 6$$

$$y > x$$



b. Identify and interpret a solution of the system.

$$(2, 3)$$

2 bags of red beads & 3 bags of blue beads are under 18 & gives more blue than red.

c. Use the graph to determine whether you can buy 3 bags of red beads and 5 bags of blue beads.

(3, 5) is  
No, not a solution