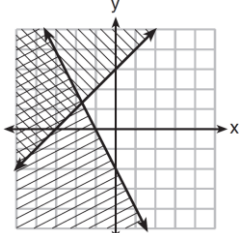


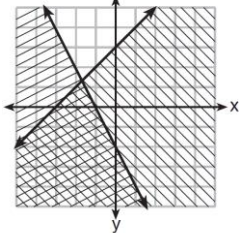
**HW 6-7: A.REI.D.12: Graphing Systems of Linear Inequalities 1**  
**Multiple Choice**

1 Which graph represents the solution of  $y \leq x + 3$  and  $y \geq -2x - 2$ ?

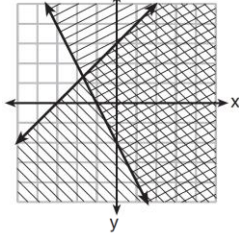
1



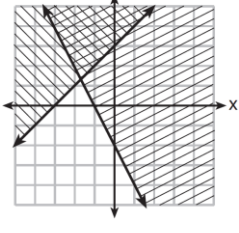
2



3



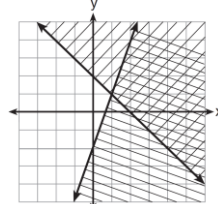
4



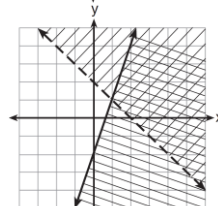
2. Given:  $y + x > 2$   
 $y \leq 3x - 2$

Which graph shows the solution of the given set of inequalities?

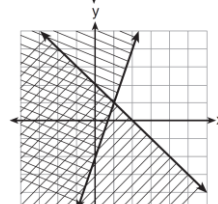
1



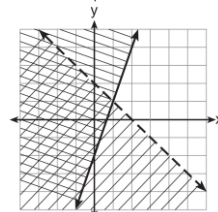
2



3



4



3 MULTIPLE CHOICE: Which ordered pair is *not* in the solution set of

$$y > -\frac{1}{2}x + 5 \text{ and } y \leq 3x - 2?$$

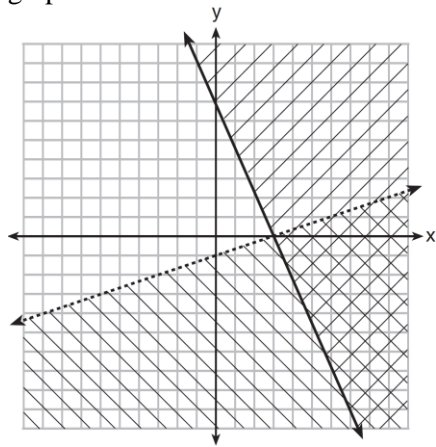
1 (5, 3)

2 (4, 3)

3 (3, 4)

4 (4, 4)

4 MULTIPLE CHOICE: What is one point that lies in the solution set of the system of inequalities graphed below?



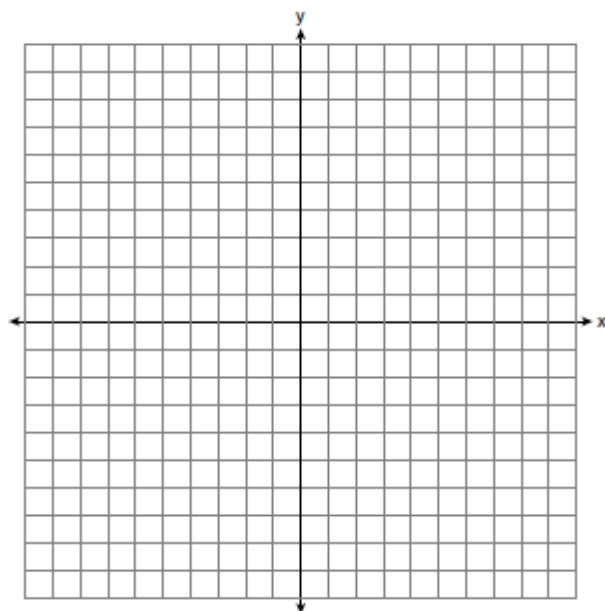
- 1 (7, 0)
- 2 (3, 0)
- 3 (0, 7)
- 4 (-3, 5)

**Short Answer**

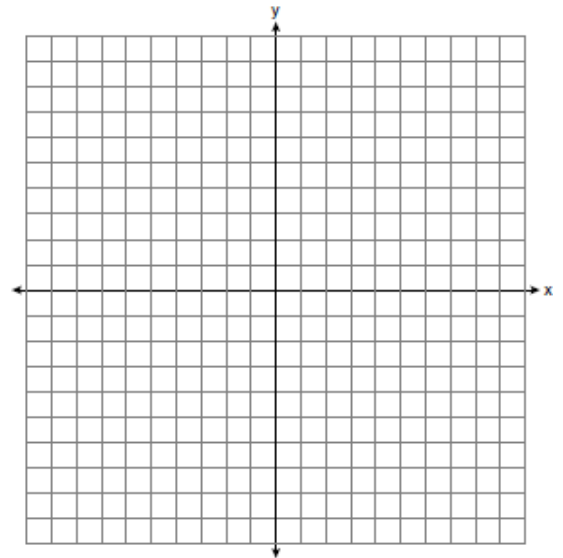
5 On the set of axes below, solve the following system of inequalities graphically & state the coordinates of a point in the solution set.

$$y \geq -\frac{1}{3}x + 4$$

$$y < 2x + 1$$

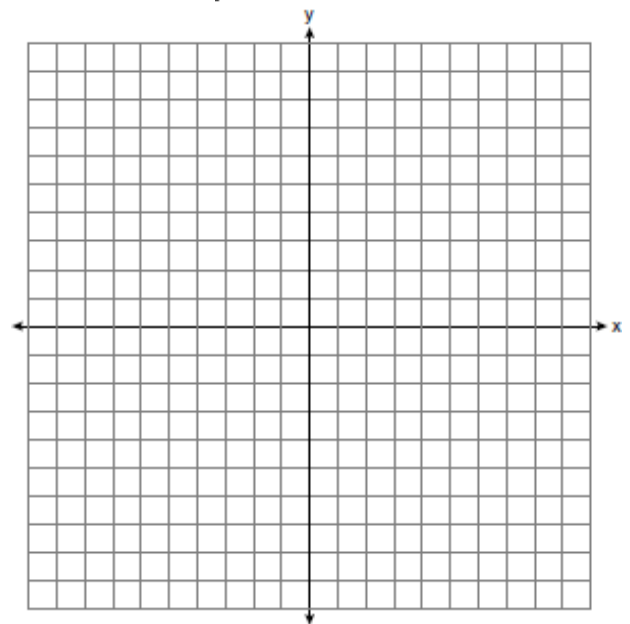


6. Graph  $y < x$  and  $x > 5$  on the axes below & state a solution



7 Graph the following systems of inequalities on the accompanying set of axes and label the solution set  $S$ :  $y > x - 4$

$$y + x \geq 2$$

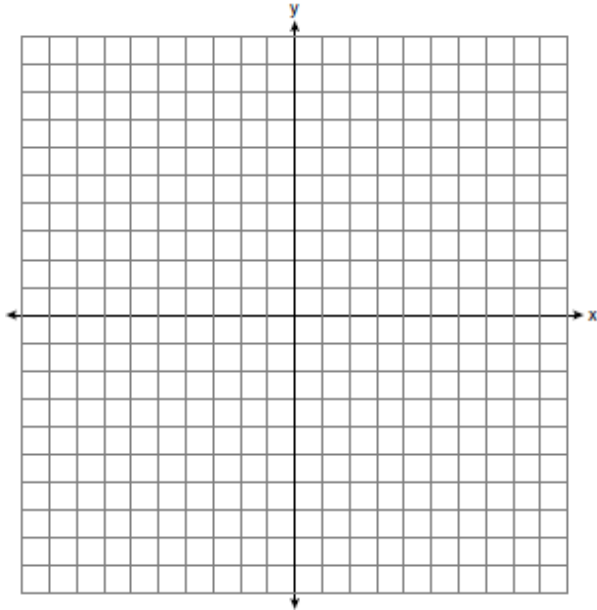


8. On the set of axes below, graph the following system of inequalities.

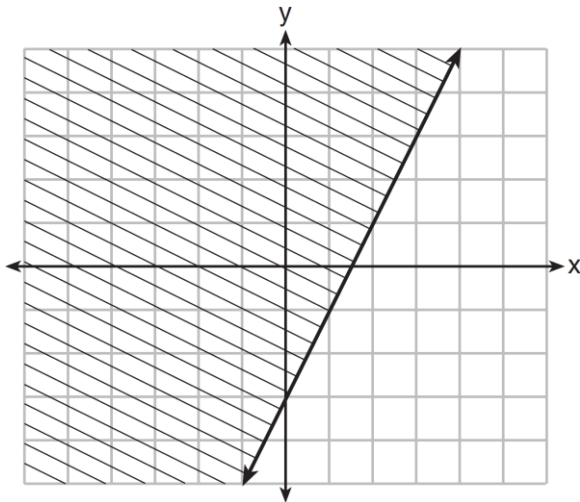
$$y + x \geq 3$$

$$5x - 2y > 10$$

State the coordinates of *one* point that satisfies  $y + x \geq 3$ , but does *not* satisfy  $5x - 2y > 10$ .

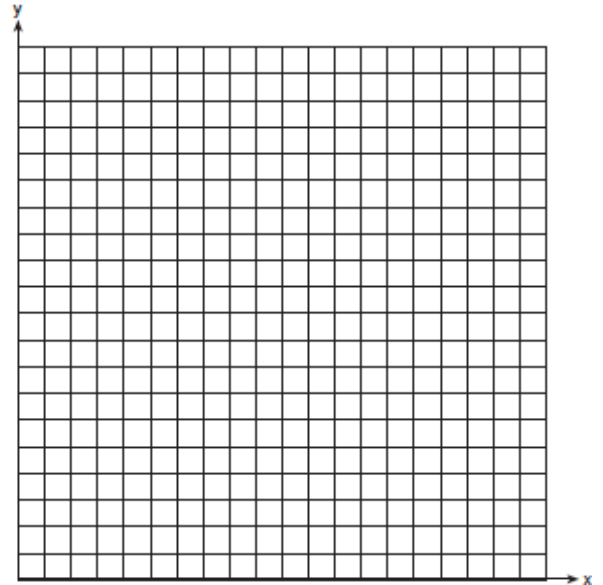


- 9 The graph of an inequality is shown below.



- Write the inequality represented by the graph.
- On the same set of axes, graph the inequality  $x + 2y < 4$ .
- The two inequalities graphed on the set of axes form a system. Oscar thinks that the point  $(2, 1)$  is in the solution set for this system of inequalities. Determine and state whether you agree with Oscar. Explain your reasoning.

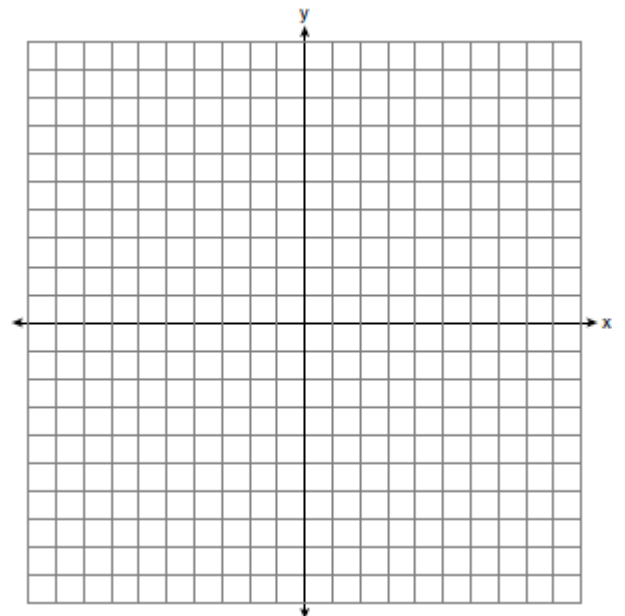
- 10 A company manufactures bicycles and skateboards. The company's daily production of bicycles cannot exceed 10, and its daily production of skateboards must be less than or equal to 12. The combined number of bicycles and skateboards cannot be more than 16. If  $x$  is the number of bicycles and  $y$  is the number of skateboards, graph on the accompanying set of axes the region that contains the number of bicycles and skateboards the company can manufacture daily.



- 11 Solve the following system of inequalities graphically on the set of axes below & state the coordinates of a point in the solution set

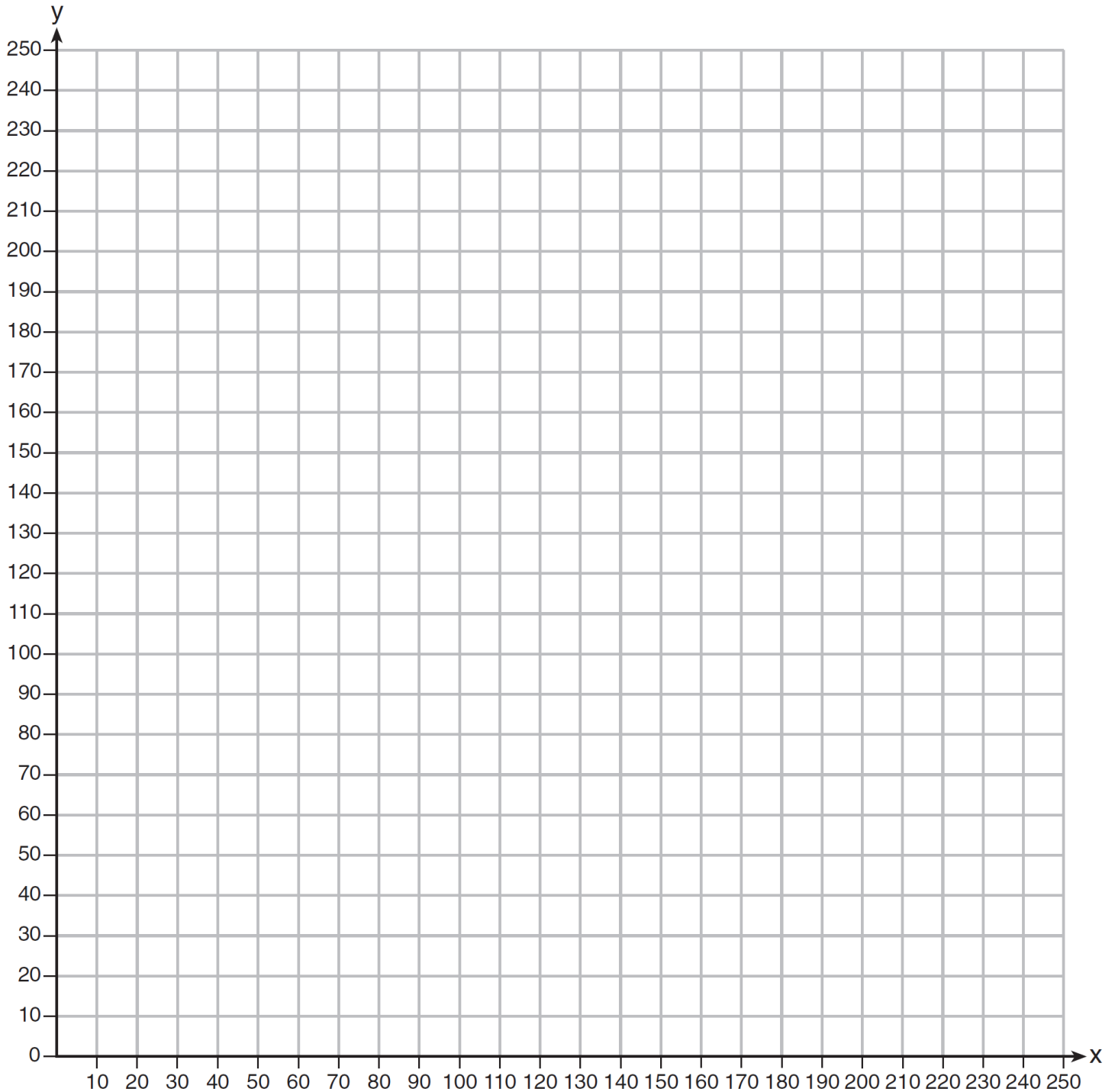
$$3x + y < 7$$

$$y \geq \frac{2}{3}x - 4$$



### Constructed Response

- 12 The Reel Good Cinema is conducting a mathematical study. In its theater, there are 200 seats. Adult tickets cost \$12.50 and child tickets cost \$6.25. The cinema's goal is to sell at least \$1500 worth of tickets for the theater. Write a system of linear inequalities that can be used to find the possible combinations of adult tickets,  $x$ , and child tickets,  $y$ , that would satisfy the cinema's goal. Graph the solution to this system of inequalities on the set of axes below. Label the solution with an  $S$ . Marta claims that selling 30 adult tickets and 80 child tickets will result in meeting the cinema's goal. Explain whether she is correct or incorrect, based on the graph drawn.



## HW 6-7: A.REI.D.12: Graphing Systems of Linear Inequalities 1 Answer Section

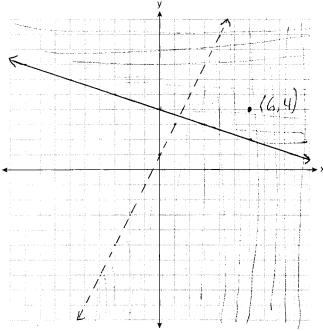
1 ANS: 3 REF: 081506ai

2 ANS: 2 REF: 061404ai

3 ANS: 2  
b.) (4, 3)

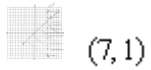
4 ANS: 1  
A.) (7, 0)

5 ANS:



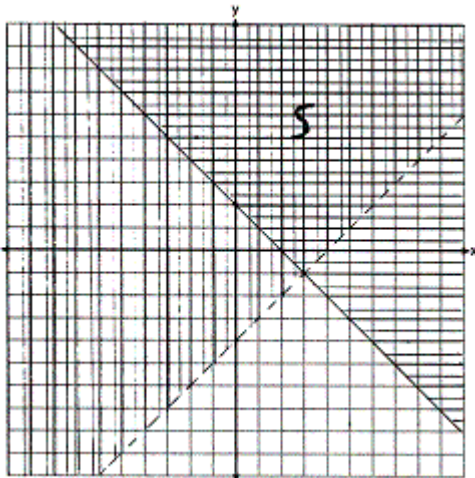
REF: 081037ia

6 ANS:



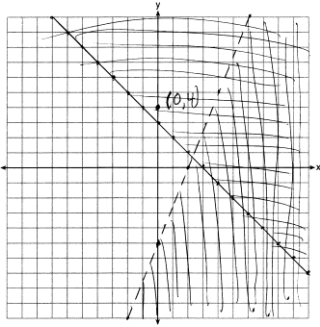
REF: 011536ia

7 ANS:



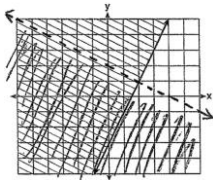
REF: 010738a

8 ANS:



REF: 081239ia

9 ANS:

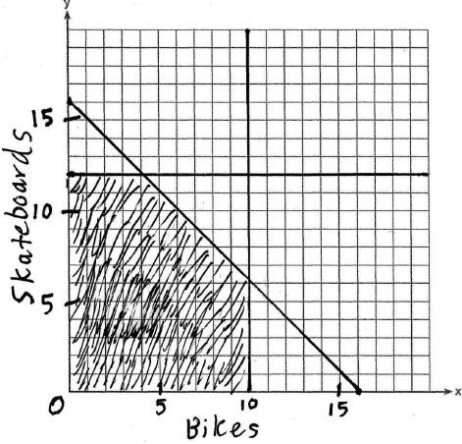


$y \geq 2x - 3.$

Oscar is wrong.  $(2) + 2(1) < 4$  is not true.

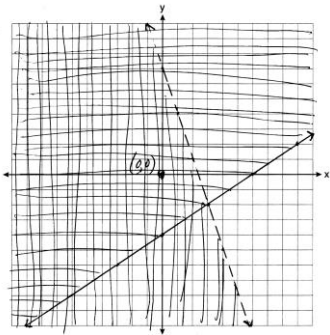
REF: 011534ai

10 ANS:



REF: 010234a

11 ANS:



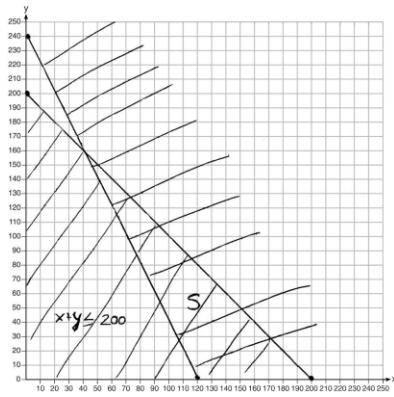
REF: 061139ia

12 ANS:

$$x + y \leq 200 \quad \text{Marta is incorrect because } 12.5(30) + 6.25(80) < 1500$$

$$12.5x + 6.25y \geq 1500 \quad 375 + 500 < 1500$$

$$875 < 1500$$



REF: 011637ai