Name: _____ **Class:** _____ **Date:** _____ **ID: A**

Algebra I - Chapter 6 Test 2 Review

Which ordered pair is a solution of the inequality?

____ 1. $y \geq 4x - 5$

a. (3, 4) b. (2, 1) c. (3, 0) d. (1, 1)

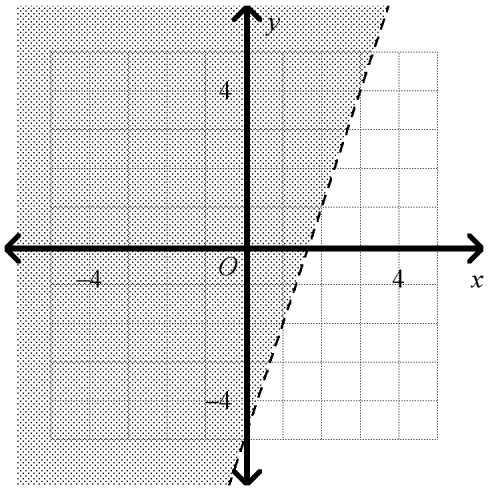
____ 2. $2y + 6 < 8x$

a. (4, 13) b. (–5, 2) c. (0, 6) d. (4, 8)

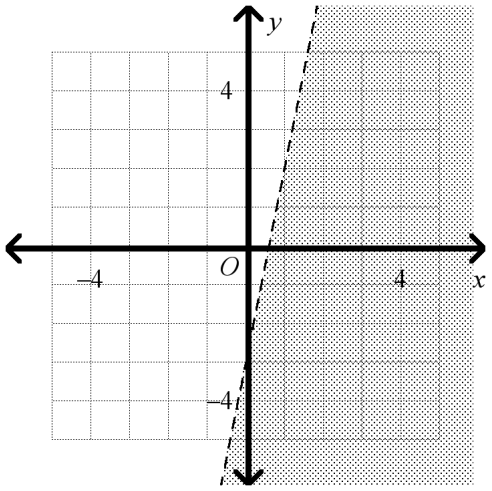
Graph the inequality.

____ 3. $y < 3x - 5$

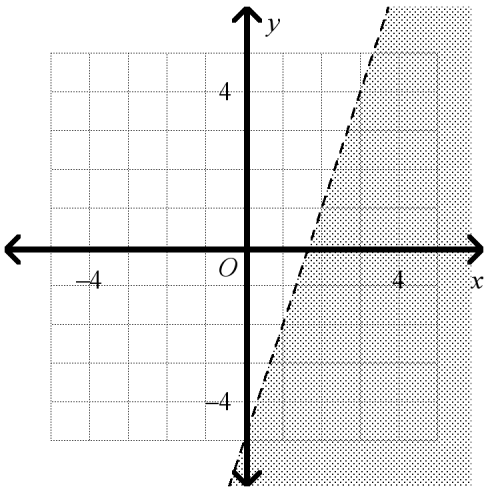
a.



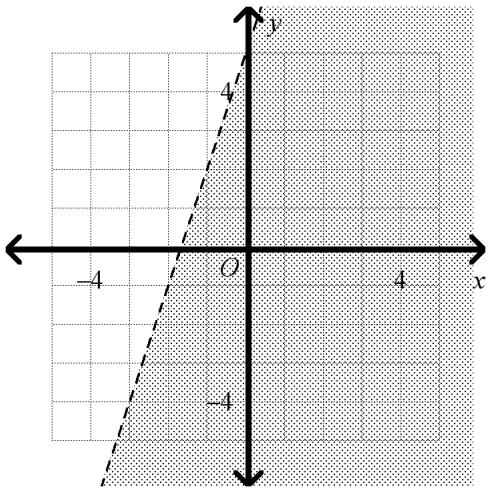
c.



b.

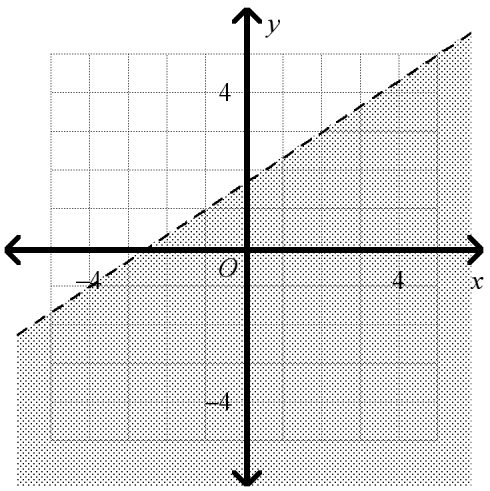


d.

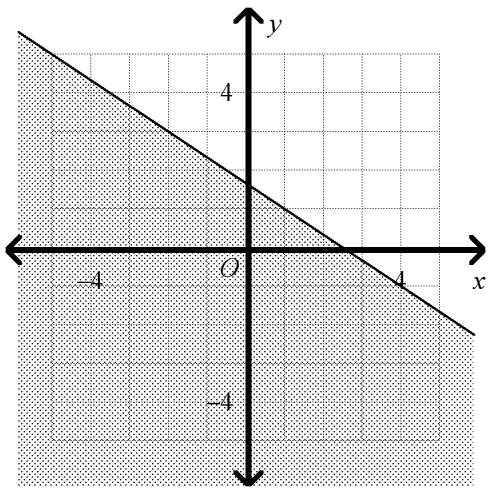


____ 4. $4x + 6y \geq 10$

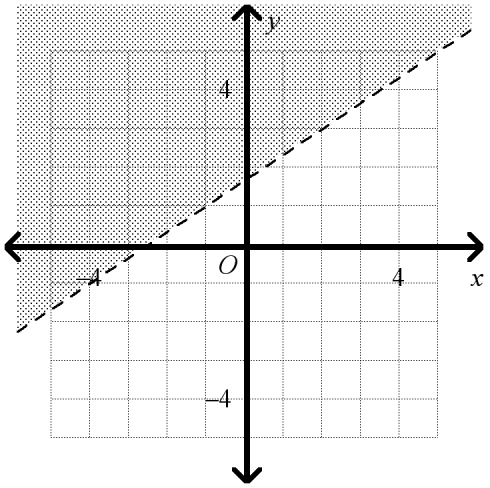
a.



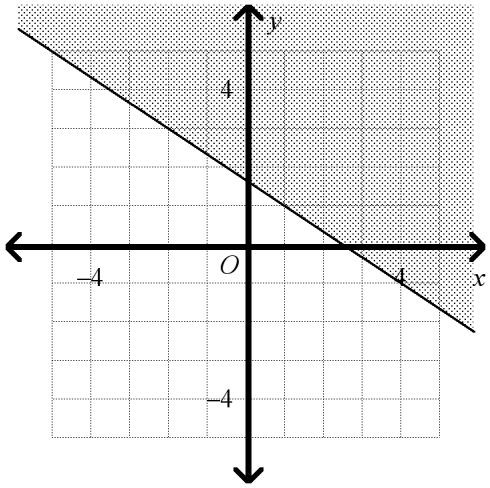
c.



b.

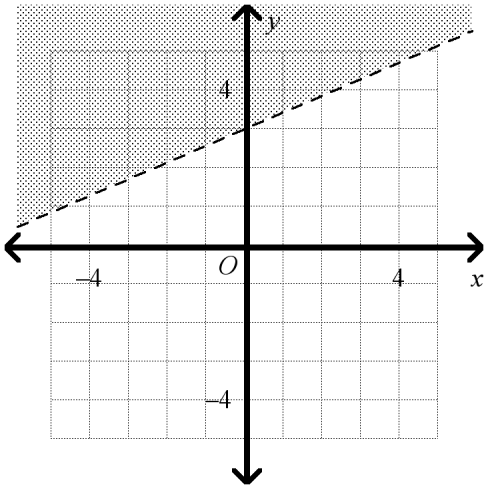


d.

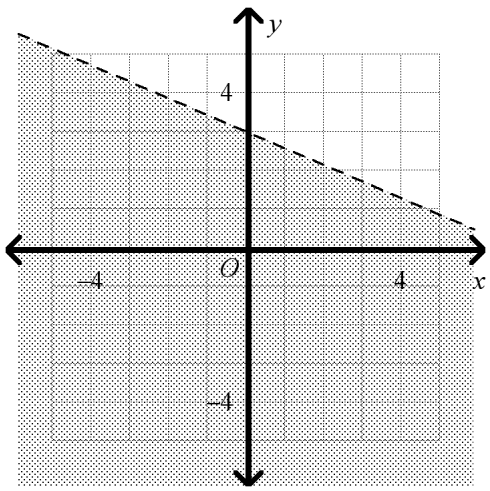


____ 5. $3x - 7y < -21$

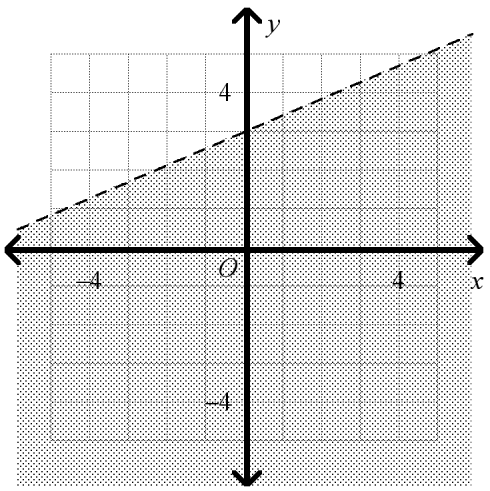
a.



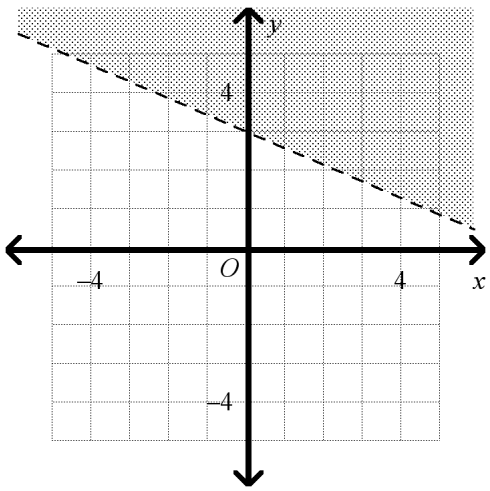
c.



b.

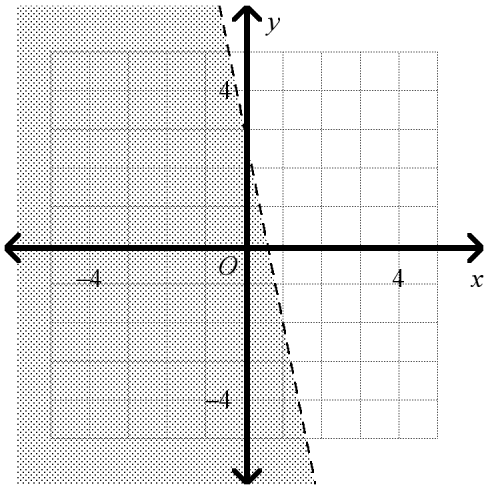


d.

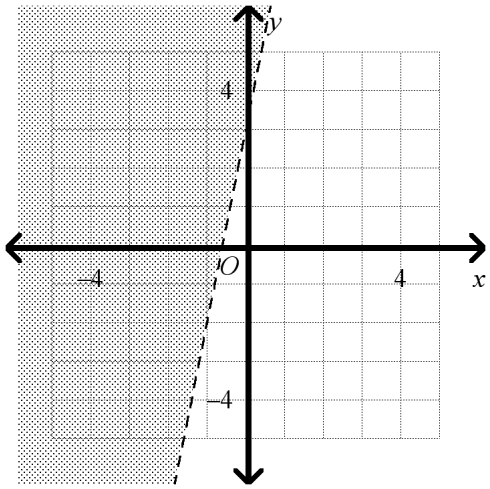


____ 6. $y > -5x + 3$

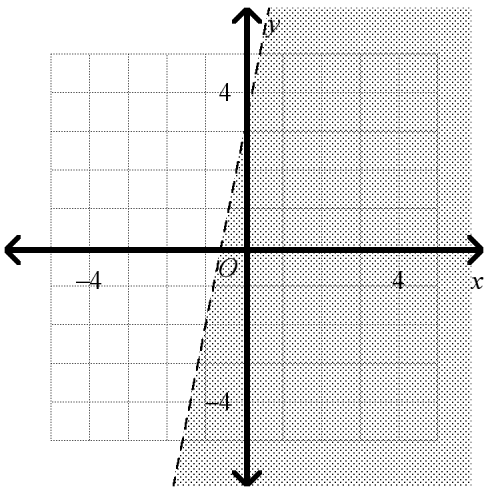
a.



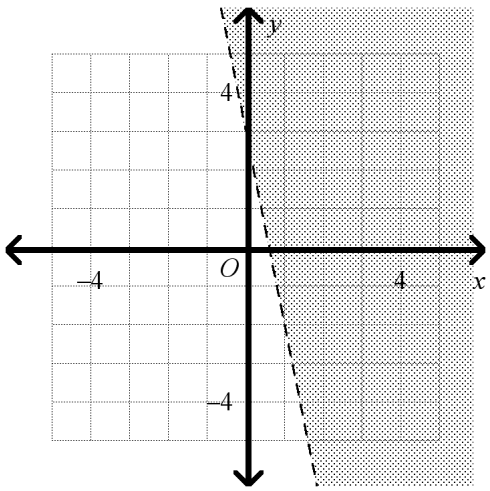
c.



b.



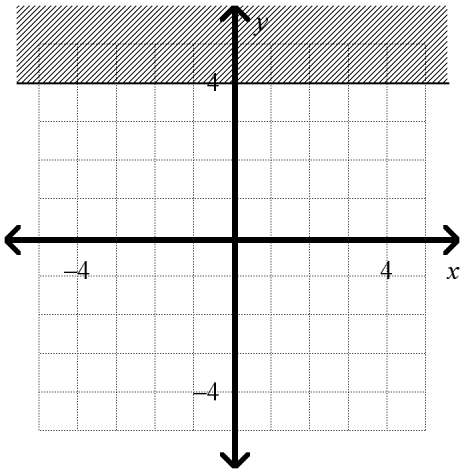
d.



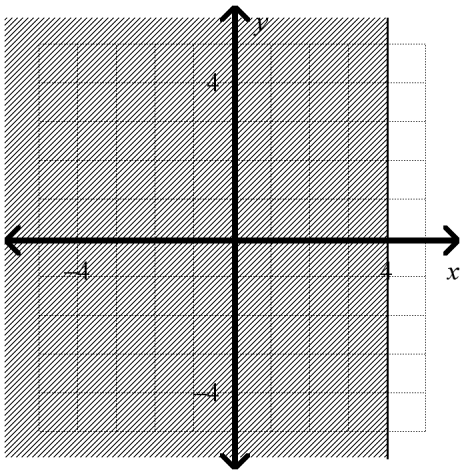
What is the graph of the inequality in the coordinate plane?

____ 7. $x \geq 4$

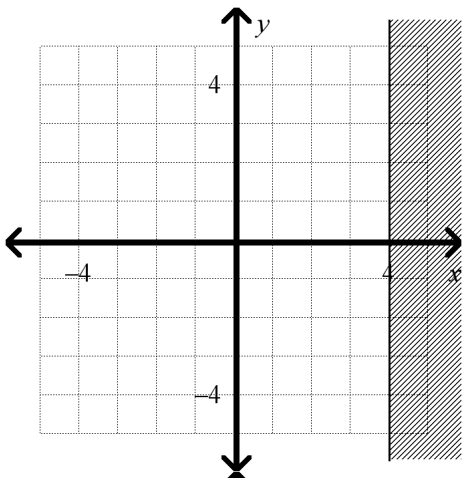
a.



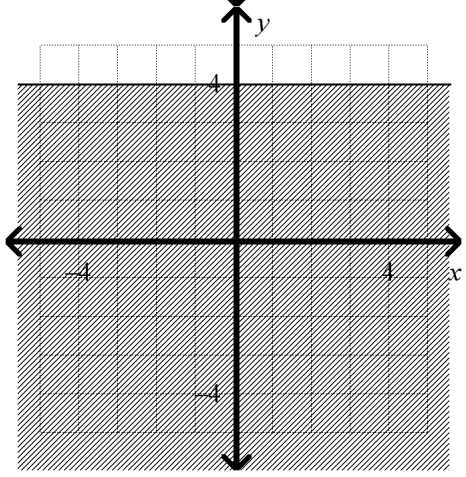
b.



c.

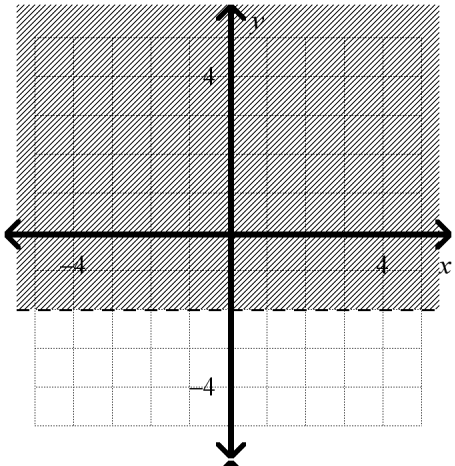


d.

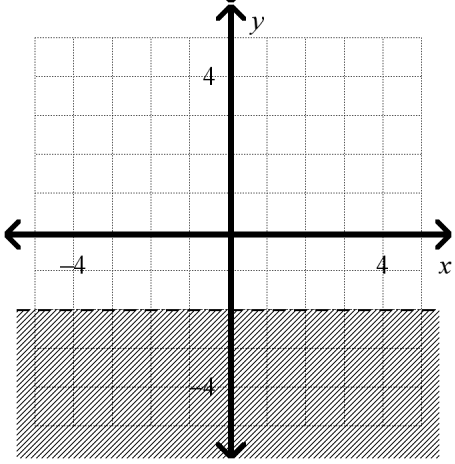


____ 8. $y < -2$

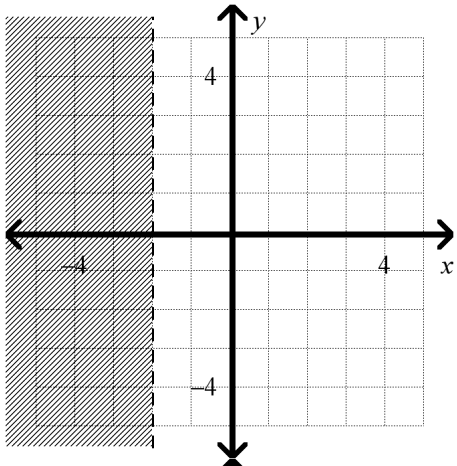
a.



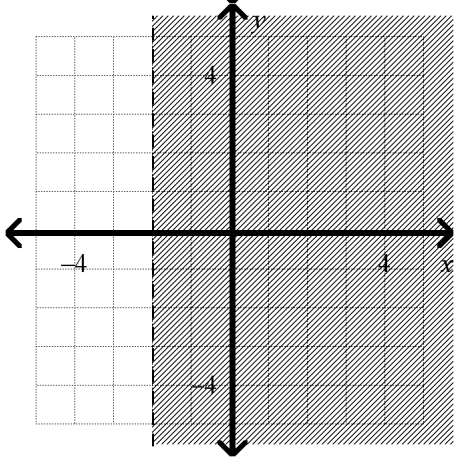
b.



c.

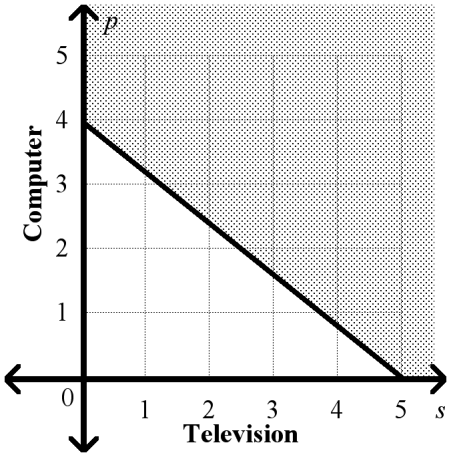


d.



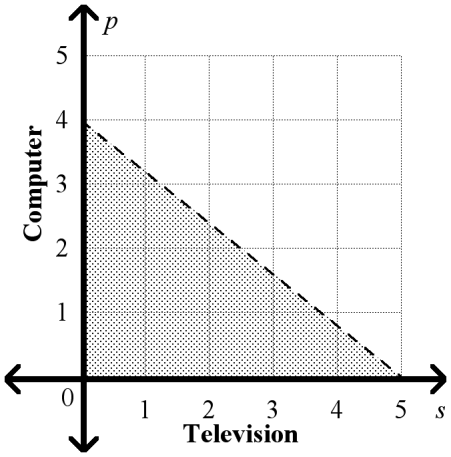
____ 9. An electronics store makes a profit of \$72 for every television sold and \$90 for every computer sold. The manager's target is to make at least \$360 a day on sales from televisions and computers. Write a linear inequality and graph the solutions. What are three possible solutions to the problem?

a. $72s + 90p \geq 360$



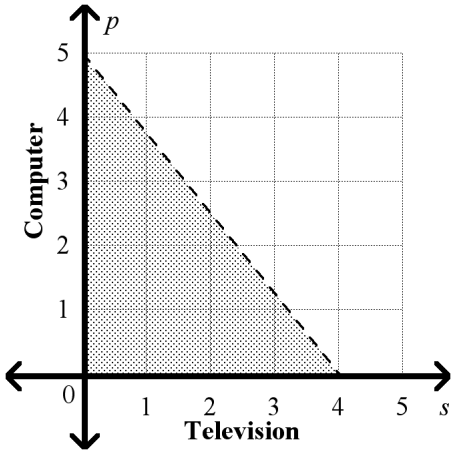
(5, 2), (3, 3), and (1, 4) are three possible solutions.

b. $72s + 90p \leq 360$



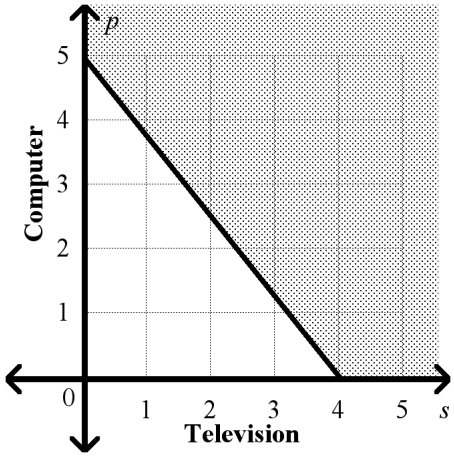
(4, 0), (2, 2), and (1, 1) are three possible solutions.

c. $90s + 72p \leq 360$



(3, 1), (2, 2), and (1, 0) are three possible solutions.

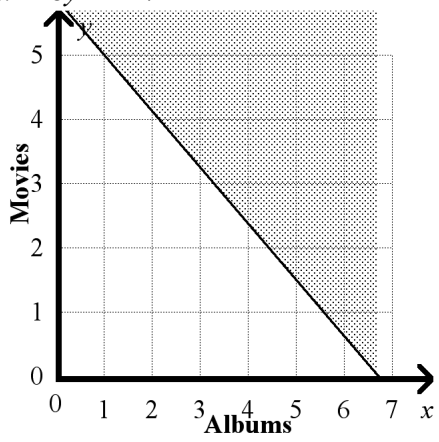
d. $90s + 72p \geq 360$



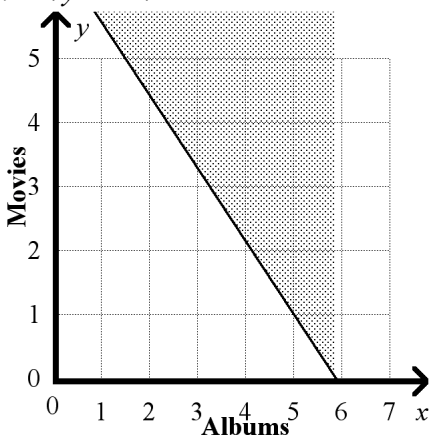
(4, 0), (3, 3), and (1, 4) are three possible solutions.

____ 10. You have \$47 to spend on music and movie downloads. Each album download costs \$7 and each movie download costs \$8. Write and graph a linear inequality that represents this situation. Let x represent the number of albums and y the number of movies.

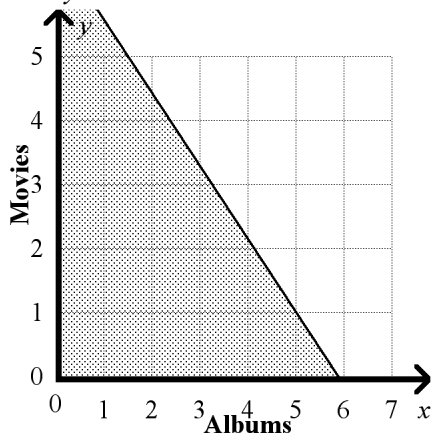
a. $7x + 8y \geq 47$



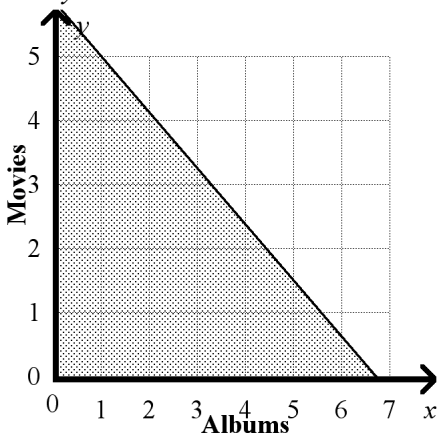
c. $8x + 7y \geq 47$



b. $8x + 7y \leq 47$

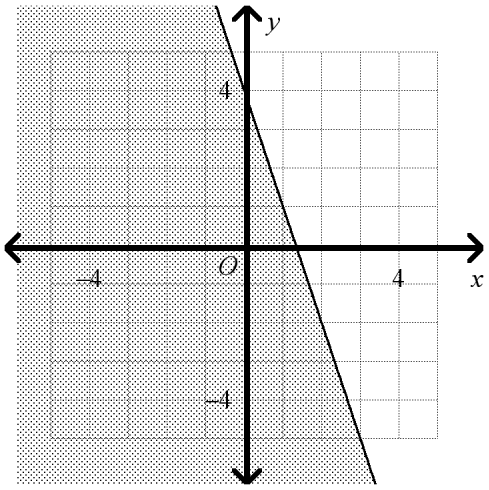


d. $7x + 8y \leq 47$



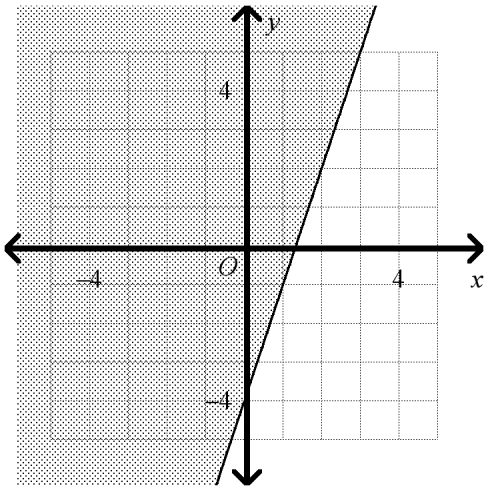
Which inequality represents the graph?

____ 11.



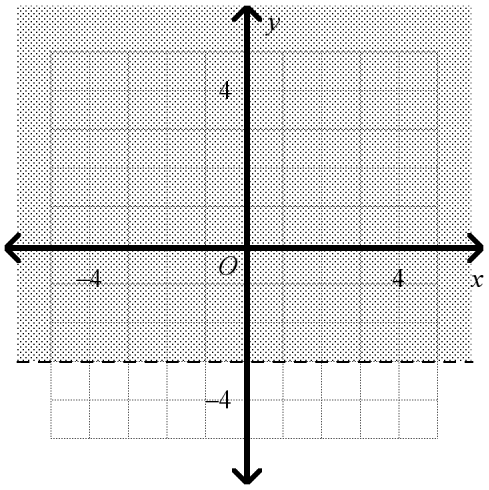
a. $y \geq -3x + 4$ b. $y \leq -3x + 4$ c. $y \geq -3x - 4$ d. $y \leq -3x - 4$

____ 12.



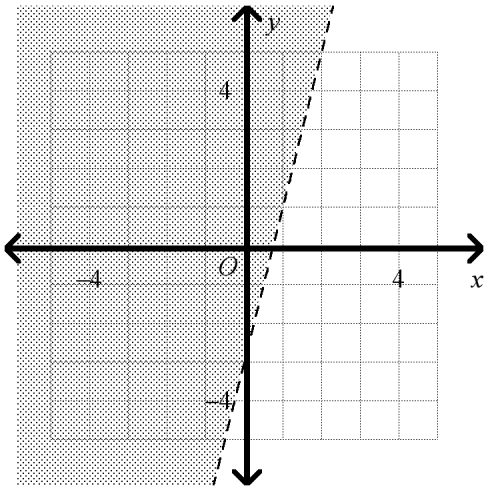
a. $y \leq 3x + 4$ b. $y \leq 3x - 4$ c. $y \geq 3x - 4$ d. $y \geq 3x + 4$

____ 13.



a. $x > -3$ b. $x \geq -3$ c. $y > -3$ d. $y \geq -3$

____ 14.



a. $y > 4x - 3$ b. $y \leq 4x + 3$ c. $y < 4x - 3$ d. $y \geq 4x + 3$

15. Is the ordered pair a solution of $y > \frac{9}{14}x + 2$?

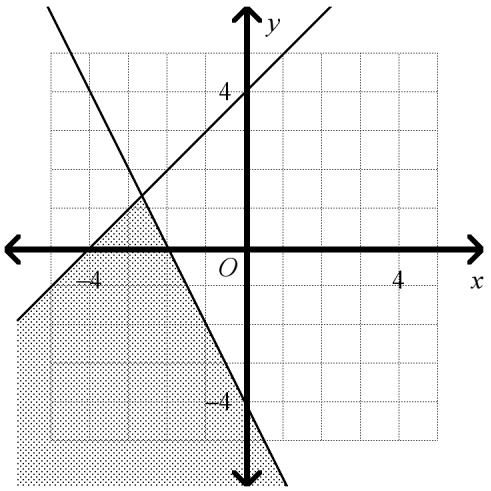
(4, 7)

16. A doctor's office schedules 10-minute and 20-minute appointments. The doctor also makes hospital rounds for four hours each weekday. Suppose the doctor limits these activities to, at most, 30 hours per week. Write a linear inequality to show the number of 10-minute and 20-minute appointments the doctor can schedule and graph the solutions. What are three possible solutions to the problem?

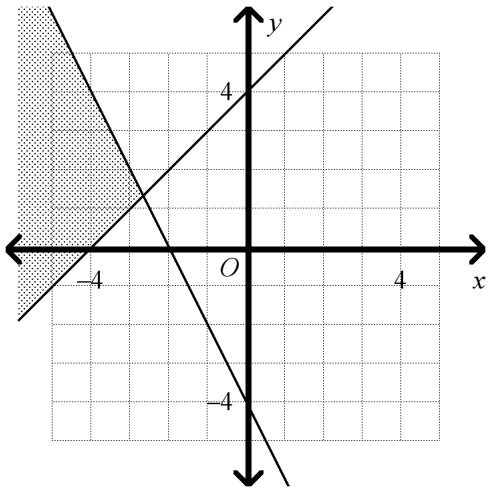
What is the graph of the system?

____ 17. $y \leq x + 4$
$2x + y \leq -4$

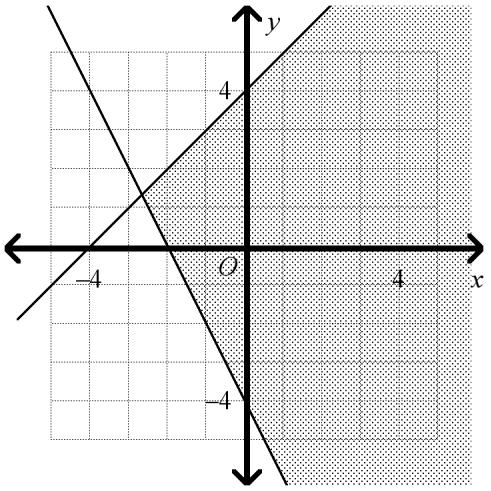
a.



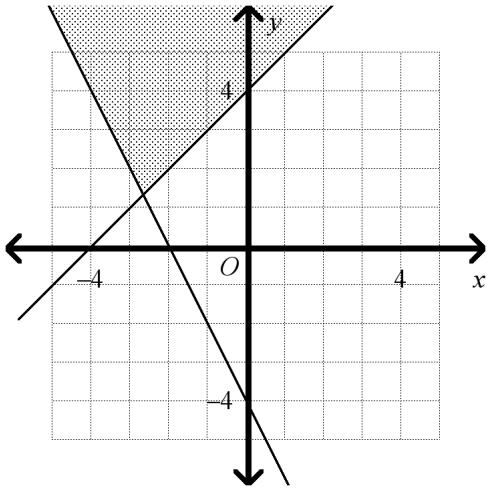
c.



b.

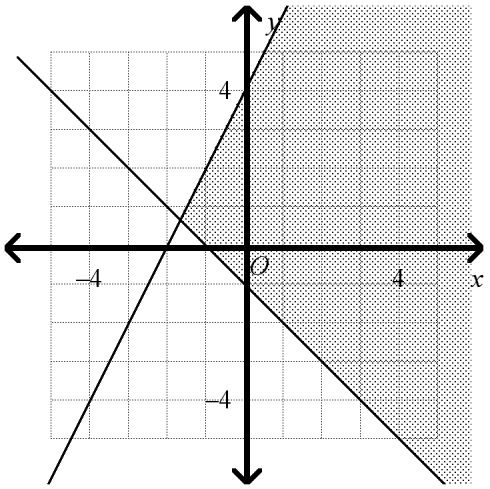


d.

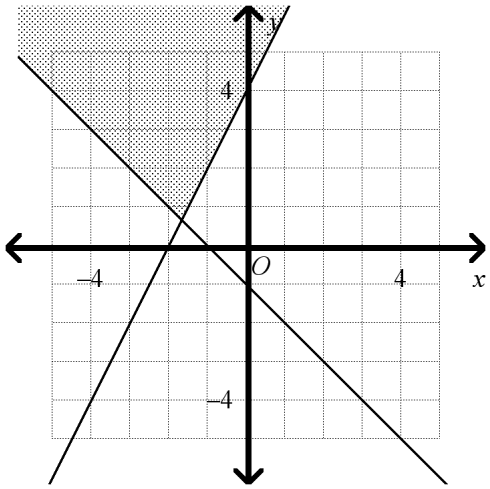


____ 18. $y \leq -x - 1$
$y \geq 2x + 4$

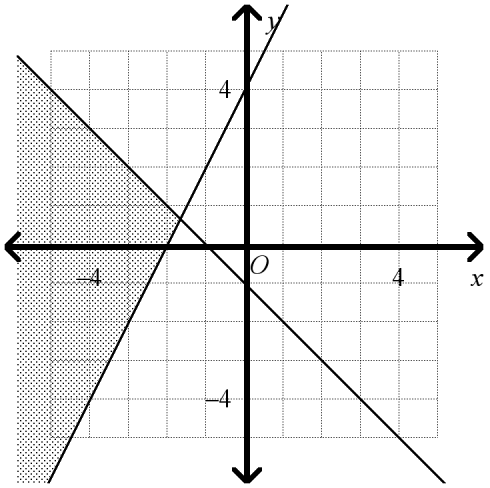
a.



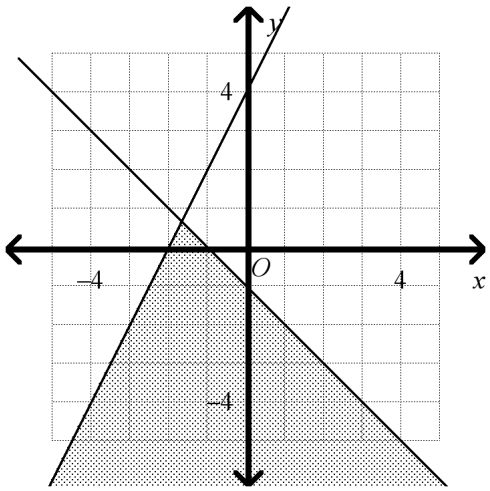
c.



b.

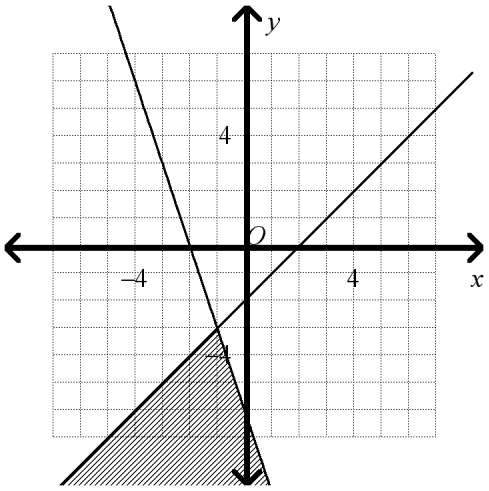


d.



What system of inequalities is represented by the graph?

____ 19.



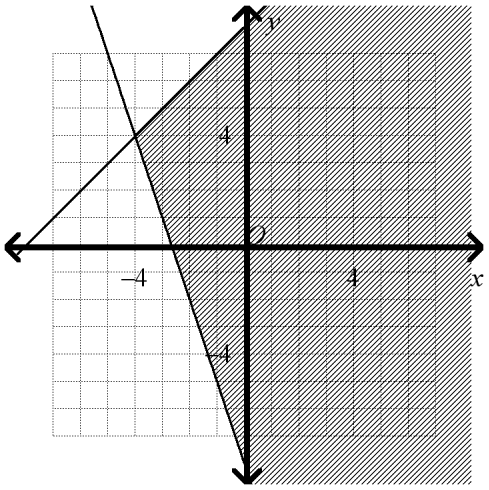
a. $y \geq x - 2$
$y \geq -3x - 6$

b. $y \leq x + 3$
$y \geq 2x - 6$

c. $y \leq x - 2$
$y \leq -3x - 6$

d. $y \geq x + 3$
$y \leq 2x - 6$

____ 20.



a. $y \geq x + 8$
$8x + y \geq -8$

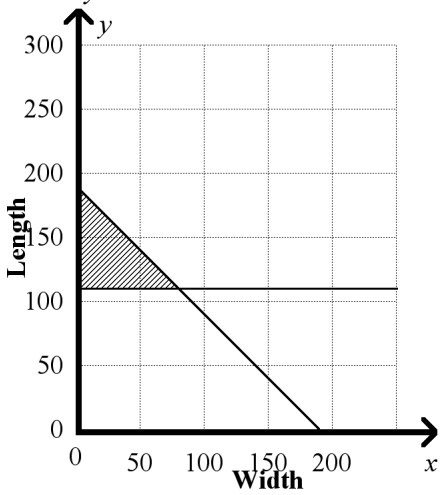
b. $y \leq x + 3$
$8x + y \leq -8$

c. $y \geq x + 8$
$3x + y \leq -8$

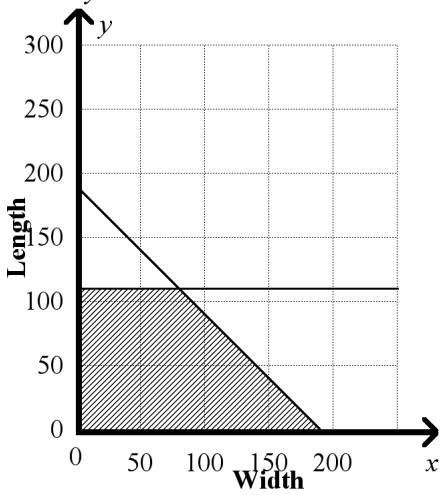
d. $y \leq x + 8$
$3x + y \geq -8$

____ 21. A local citizen wants to fence a rectangular community garden. The length of the garden should be at least 110 ft, and the distance around should be no more than 380 ft. Write a system of inequalities that models the possible dimensions of the garden. Graph the system to show all possible solutions.

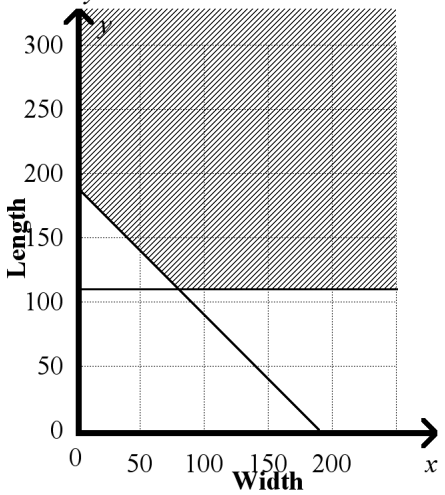
a. $y \geq 110$
$2x + 2y \leq 380$



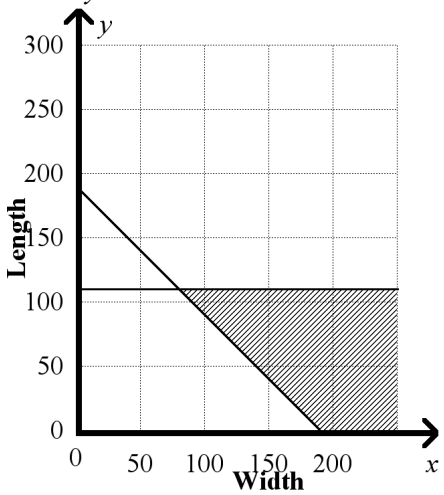
c. $y \leq 110$
$2x + 2y \leq 380$



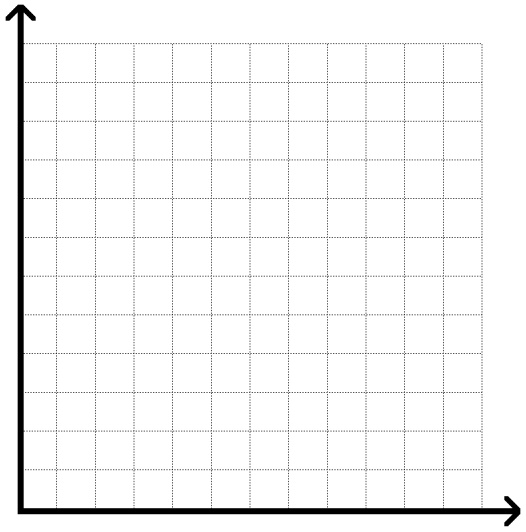
b. $y \geq 110$
$2x + 2y \geq 380$



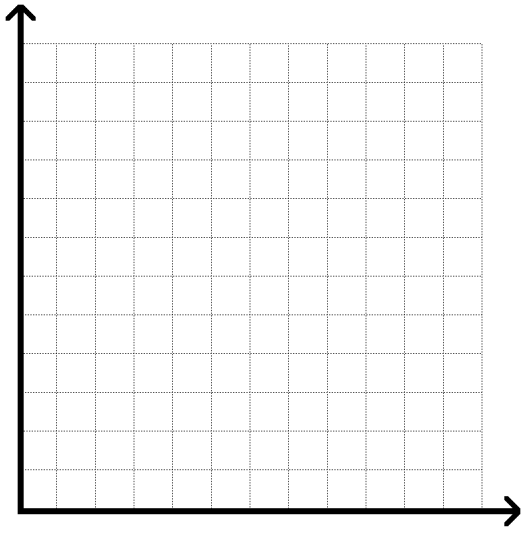
d. $y \leq 110$
$2x + 2y \geq 380$



22. You have a gift certificate to a book store worth \$95. Each paperback books is \$10 and each hardcover books is \$17. You must spend at least \$20 in order to use the gift certificate. Write and graph a system of inequalities to model the number of each kind of books you can buy. Let x = the number of paperback books and y = the number of hardback books.



23. Amy's restaurant has budgeted at most \$60 to spend this month on gourmet coffee. All international blends cost \$8.50 per package and all house blends cost \$6.00 per package. She would like to purchase some international blends and at least 3 packages of the house blends. Write a system of linear inequalities that describes this situation. Graph the system. Give a possible solution and describe what it means.



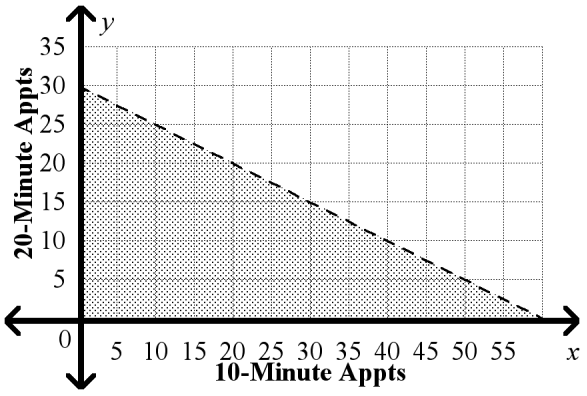
Algebra I - Chapter 6 Test 2 Review
Answer Section

1. ANS: D PTS: 1 DIF: L2 REF: 6-5 Linear Inequalities
   OBJ: 6-5.1 To graph linear inequalities in two variables NAT: CC A.CED.3| CC A.REI.12| A.4.d
   TOP: 6-5 Problem 1 Identifying Solutions of a Linear Inequality
   KEY: linear inequality | solution of an inequality
2. ANS: D PTS: 1 DIF: L3 REF: 6-5 Linear Inequalities
   OBJ: 6-5.1 To graph linear inequalities in two variables NAT: CC A.CED.3| CC A.REI.12| A.4.d
   TOP: 6-5 Problem 1 Identifying Solutions of a Linear Inequality
   KEY: linear inequality | solution of an inequality
3. ANS: B PTS: 1 DIF: L3 REF: 6-5 Linear Inequalities
   OBJ: 6-5.1 To graph linear inequalities in two variables NAT: CC A.CED.3| CC A.REI.12| A.4.d
   TOP: 6-5 Problem 2 Graphing an Inequality in Two Variables
   KEY: linear inequality
4. ANS: D PTS: 1 DIF: L4 REF: 6-5 Linear Inequalities
   OBJ: 6-5.1 To graph linear inequalities in two variables NAT: CC A.CED.3| CC A.REI.12| A.4.d
   TOP: 6-5 Problem 2 Graphing an Inequality in Two Variables
   KEY: linear inequality
5. ANS: A PTS: 1 DIF: L4 REF: 6-5 Linear Inequalities
   OBJ: 6-5.1 To graph linear inequalities in two variables NAT: CC A.CED.3| CC A.REI.12| A.4.d
   TOP: 6-5 Problem 2 Graphing an Inequality in Two Variables
   KEY: linear inequality
6. ANS: D PTS: 1 DIF: L3 REF: 6-5 Linear Inequalities
   OBJ: 6-5.1 To graph linear inequalities in two variables NAT: CC A.CED.3| CC A.REI.12| A.4.d
   TOP: 6-5 Problem 2 Graphing an Inequality in Two Variables
   KEY: linear inequality
7. ANS: C PTS: 1 DIF: L3 REF: 6-5 Linear Inequalities
   OBJ: 6-5.1 To graph linear inequalities in two variables NAT: CC A.CED.3| CC A.REI.12| A.4.d
   TOP: 6-5 Problem 3 Graphing a Linear Inequality in One Variable
   KEY: linear inequality
8. ANS: B PTS: 1 DIF: L3 REF: 6-5 Linear Inequalities
   OBJ: 6-5.1 To graph linear inequalities in two variables NAT: CC A.CED.3| CC A.REI.12| A.4.d
   TOP: 6-5 Problem 3 Graphing a Linear Inequality in One Variable
   KEY: linear inequality
9. ANS: A PTS: 1 DIF: L3 REF: 6-5 Linear Inequalities
   OBJ: 6-5.2 To use linear inequalities when modeling real-world situations
   NAT: CC A.CED.3| CC A.REI.12| A.4.d TOP: 6-5 Problem 4 Rewriting to Graph an Inequality
   KEY: linear inequality | constraints | viable solutions
10. ANS: D PTS: 1 DIF: L3 REF: 6-5 Linear Inequalities
    OBJ: 6-5.2 To use linear inequalities when modeling real-world situations
    NAT: CC A.CED.3| CC A.REI.12| A.4.d TOP: 6-5 Problem 4 Rewriting to Graph an Inequality
    KEY: linear inequality | constraints | viable solutions
11. ANS: B PTS: 1 DIF: L3 REF: 6-5 Linear Inequalities
    OBJ: 6-5.1 To graph linear inequalities in two variables NAT: CC A.CED.3| CC A.REI.12| A.4.d
    TOP: 6-5 Problem 5 Writing an Inequality From a Graph KEY: linear inequality

12. ANS: C PTS: 1 DIF: L3 REF: 6-5 Linear Inequalities
OBJ: 6-5.1 To graph linear inequalities in two variables NAT: CC A.CED.3| CC A.REI.12| A.4.d
TOP: 6-5 Problem 5 Writing an Inequality From a Graph KEY: linear inequality
13. ANS: C PTS: 1 DIF: L3 REF: 6-5 Linear Inequalities
OBJ: 6-5.1 To graph linear inequalities in two variables NAT: CC A.CED.3| CC A.REI.12| A.4.d
TOP: 6-5 Problem 5 Writing an Inequality From a Graph KEY: linear inequality
14. ANS: A PTS: 1 DIF: L3 REF: 6-5 Linear Inequalities
OBJ: 6-5.1 To graph linear inequalities in two variables NAT: CC A.CED.3| CC A.REI.12| A.4.d
TOP: 6-5 Problem 5 Writing an Inequality From a Graph KEY: linear inequality
15. ANS:

Yes, $\frac{9}{14}(4) + 2 < 7$.

PTS: 1 DIF: L3 REF: 6-5 Linear Inequalities
OBJ: 6-5.1 To graph linear inequalities in two variables NAT: CC A.CED.3| CC A.REI.12| A.4.d
TOP: 6-5 Problem 1 Identifying Solutions of a Linear Inequality
KEY: linear inequality | solution of an inequality
16. ANS:
$10x + 20y \leq 600$



(20, 5), (10, 20) and (35, 10) are three possible solutions to the problem.

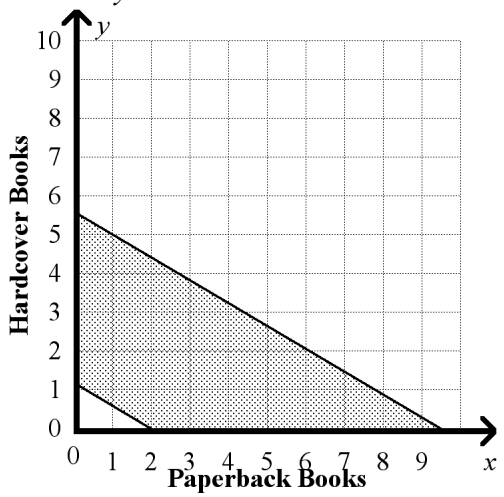
PTS: 1 DIF: L4 REF: 6-5 Linear Inequalities
OBJ: 6-5.2 To use linear inequalities when modeling real-world situations
NAT: CC A.CED.3| CC A.REI.12| A.4.d TOP: 6-5 Problem 4 Rewriting to Graph an Inequality
KEY: linear inequality | solution of an inequality | constraints | viable solutions
17. ANS: A PTS: 1 DIF: L4 REF: 6-6 Systems of Linear Inequalities
OBJ: 6-6.1 To solve systems of linear inequalities by graphing
NAT: CC A.REI.12| A.4.d TOP: 6-6 Problem 1 Graphing a System of Inequalities
KEY: system of linear inequalities
18. ANS: B PTS: 1 DIF: L3 REF: 6-6 Systems of Linear Inequalities
OBJ: 6-6.1 To solve systems of linear inequalities by graphing
NAT: CC A.REI.12| A.4.d TOP: 6-6 Problem 1 Graphing a System of Inequalities
KEY: system of linear inequalities

19. ANS: C PTS: 1 DIF: L3 REF: 6-6 Systems of Linear Inequalities
OBJ: 6-6.1 To solve systems of linear inequalities by graphing
NAT: CC A.REI.12| A.4.d
TOP: 6-6 Problem 2 Writing a System of Inequalities From a Graph
KEY: system of linear inequalities

20. ANS: D PTS: 1 DIF: L3 REF: 6-6 Systems of Linear Inequalities
OBJ: 6-6.1 To solve systems of linear inequalities by graphing
NAT: CC A.REI.12| A.4.d
TOP: 6-6 Problem 2 Writing a System of Inequalities From a Graph
KEY: system of linear inequalities

21. ANS: A PTS: 1 DIF: L3 REF: 6-6 Systems of Linear Inequalities
OBJ: 6-6.2 To model real-world situations using systems of linear inequalities
NAT: CC A.REI.12| A.4.d TOP: 6-6 Problem 3 Using a System of Inequalities
KEY: system of linear inequalities | solution of a system of linear inequalities

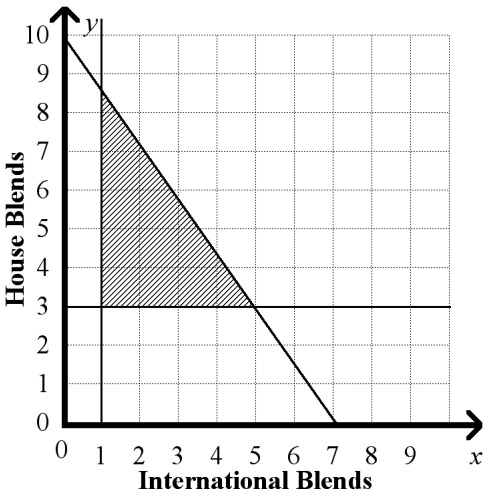
22. ANS:
$10x + 17y \geq 20$
$10x + 17y \leq 95$



PTS: 1 DIF: L3 REF: 6-6 Systems of Linear Inequalities
OBJ: 6-6.2 To model real-world situations using systems of linear inequalities
NAT: CC A.REI.12| A.4.d TOP: 6-6 Problem 3 Using a System of Inequalities
KEY: solution of a system of linear inequalities | system of linear inequalities

23. ANS:
Let x stand for the number of packages of international blends and let y stand for the number of packages of house blends that Amy can buy.

$8.5x + 6y \leq 60$
$x \geq 1$
$y \geq 3$



Answers may vary. Sample: (2, 7); Amy can buy 2 international blends and 7 house blends for $59.

PTS: 1 DIF: L3 REF: 6-6 Systems of Linear Inequalities
OBJ: 6-6.2 To model real-world situations using systems of linear inequalities
NAT: CC A.REI.12| A.4.d TOP: 6-6 Problem 3 Using a System of Inequalities
KEY: solution of a system of linear inequalities | system of linear inequalities | constraints | viable solutions