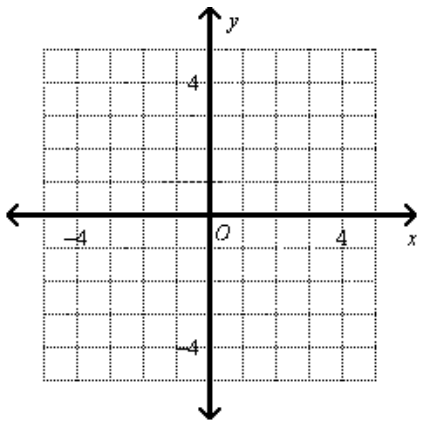
Review for Algebra Unit 5 Test Name _____ Period ____

******Show work on all problems******

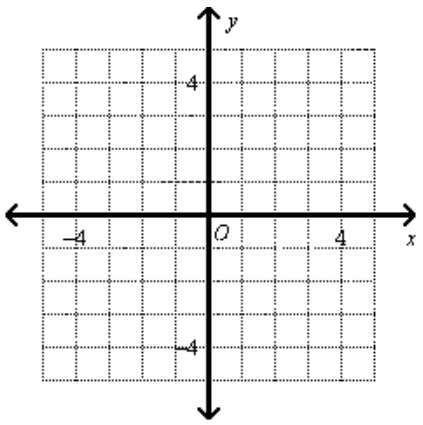
Cluster 1: Solve systems of equations and inequalities graphically.

For # 1-4, what is the solution to the following systems? Use a graph.

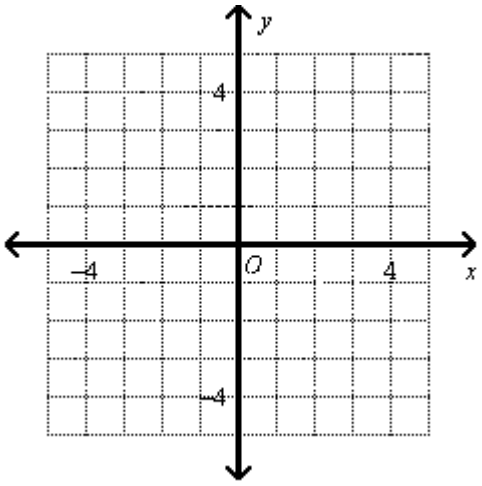
1. y = 6x - 4
y = 3 - x



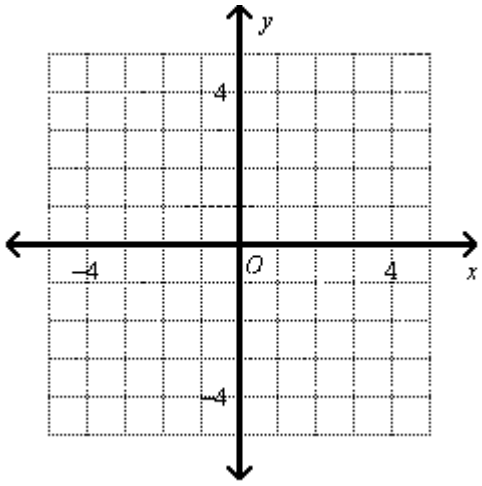
2. y = 2x - 4
y – 2x = 3



3. y > 1.5x + 2.5
y ≤ -x + 1



4. 3x + y < 4
5x – y ≤ 2



Cluster 2: Solve systems of equations algebraically.

5. Explain why (1,7) is the solution to the system $\begin{cases} y = 6x + 1 \\ y = 2x + 5 \end{cases}$

Solve the following systems algebraically, showing your work.

6. y = 2x – 1 2x + 2y = 22	**7.** y = x + 1 2x – 2y = -2
8. –x + y = -13 3x – y = 19	**9.** 5x + 4y = -83 3x – 3y = -12
10. 2x + 3y = 15 -2x + 5y = 17	**11.** x + 2y = 23 5x + 10y = 55

Cluster 3: Create Equations and Inequalities

12. Amber had 20 necklaces to sell. The gold necklaces sold for $25 each and the silver necklaces sold for $22. Amber sold all of her necklaces and made $458. Write and solve a system of equations to find how many of each kind of necklace she sold.

Write a statement about the meaning of your solution:

13. Sarah has a book with 300 pages and she is reading it at a rate of 15 pages per day. Pete has a book with 260 pages and he is reading it at a rate of 10 pages per day. Write and solve a system of equations to find the number of days after which they will both have the same number of pages left to read.

Write a statement about the meaning of your solution:

14. The fundraiser dinner will cost $150 for the room plus $15 per person. They plan to have each person pay $25 per dinner. Write a system of equations and solve to find out how many people must buy the dinner to break even.

Write a statement about the meaning of your solution:

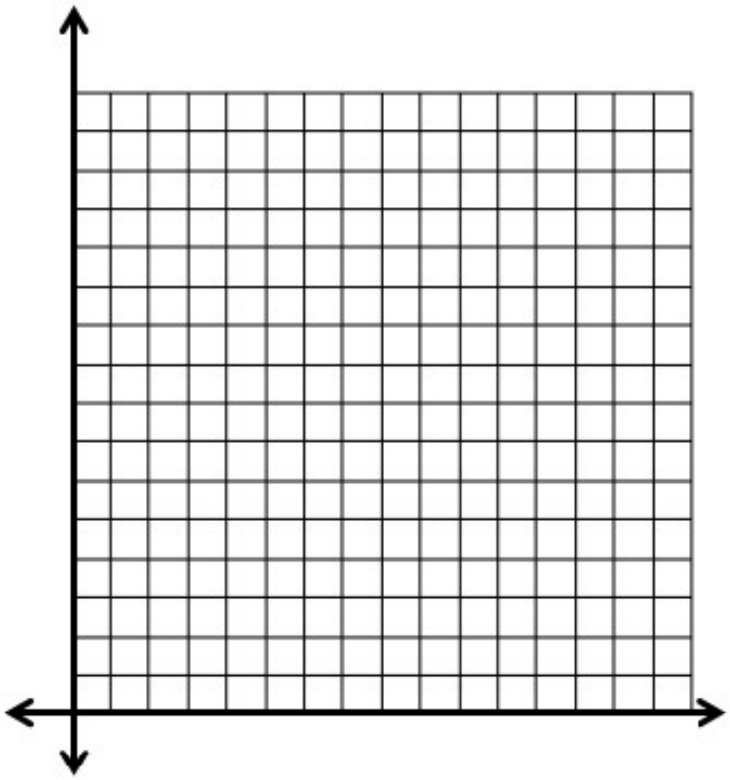
15. Britney wants to bake at most 10 loaves of bread for a bake sale. She wants to make banana bread that sells for $1.25 each and nut bread that sells for $1.50 each and make at least $24 in sales. Write a system of inequalities for the given situation. Be sure to define your variables.

16. Matt works at a car wash and walks dogs for his neighbors. He wants to work no more than 20 hours. The hours he works at the car wash is usually at a least as long as his hours walking dogs. Write a system of inequalities that represents this situation. Be sure to define your variables.

17. A friend makes $15 per hour at his first job and $11 per hour at his second job. His goal is to make at least $600 per week. He does not want to work anymore than 55 hours in a week. Write a system of inequalities for the given situation. Be sure to define your variables.

18. Will wants to mow at most 25 yards this month. He makes $4 if he only mows the front of a small yard, but he makes $12 if he mows the front and back of a large yard. He needs to make at least $120.

Write and graph a system of inequalities that shows how many of each type of yard he could mow.



What are two possible solutions? Explain how you know they would work.