Chapter 5 Take Home Test

Systems of Equations

Chapter 5 Test
Name_____
Class _____

Ms. Angie
Date_____

Solve each system of linear equations using the ELIMINATION method.

1.) $2x + y = 10$
$2x - y = 6$

2.) $2a + 5b = 4$
$7a + 15b = 9$

Solve each system of linear equations using the SUBSTITUTION method.

3.) $x + 4y = 11$
$5y + 2x = 16$

4.) $-y = 2x - 11$
$3x + y = 18$

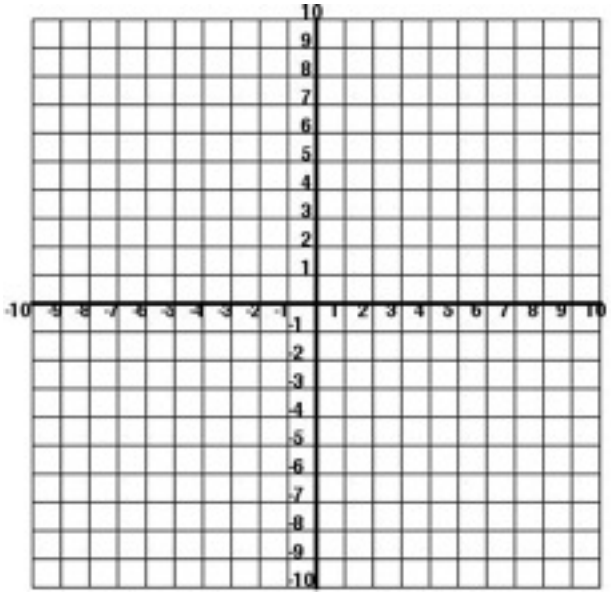
Identify whether the following systems of equations are inconsistent, dependent, or have unique solutions. Justify you answer. <u>Solve the system of equations if it has a unique solution.</u>

5.) $2x + y = 5$
$4x + 2y = 6$

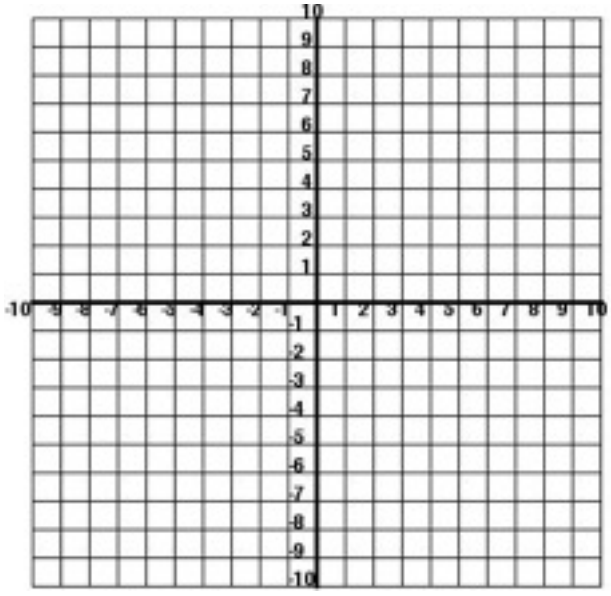
6.) $10x - 8y = 20$
$5x - 4y = 10$

Solve each system of equations using the GRAPHICAL method. Please use the provided graph or attach your own graph paper to the back.

7.) $y = x - 4$
$y = 5 - 2x$



8.) $y = 3x - 4$
$2x + y = 6$



Solve. Show your work.

9.) Joyce and Marianne both earn a combined income of $1,600 a week. Marianne earns $200 more than Joyce. How much income o Joyce and Marianne each earn?

10.) Two copies of the same hardcover book and 3 copies of the same paperback book cost $118. Sally bought 3 of the hardcover books and 2 of the paperback books for $137. Find the cost for each type of book.

11.) Ms. Stephanie bought seven armchairs and high stools. She paid a total of $1,650. The armchairs each cost $300 while the high stools each cost half the amount of one armchair. Find the number of armchairs she bought.

12.) A train traveled 400 miles in 9 hours. The speed of the train for the first part of the journey was 40 miles per hour while the speed for the second part of the journey was 50 miles per hour. Find the distance traveled when the train was traveling at 50 miles per hour.

BONUS

13.) Sara prepared 10 gift boxes for a class party. She packed x gift boxes of magnets and y gift boxes of keychains. A gift box of magnets weighed 2 pounds while a gift box of keychins weighed 3 pounds. The total weight of all the gift boxes was 24 pounds.

a.) Write a system of two linear equations.

b.) State with reasons whether the system of equations has a unique solution, is inconsistent, or dependent.

c.) How many gift boxes of magnets did Sarah pack?