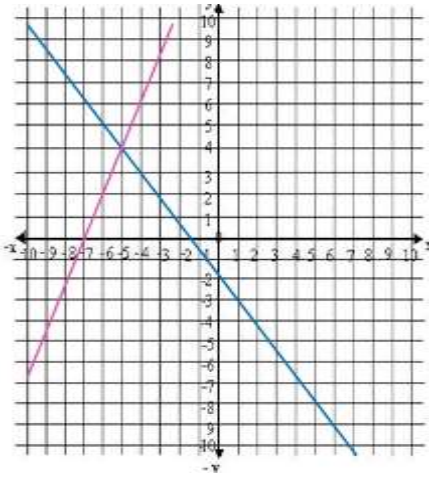
Name: _____ Period: _____ Date: _____

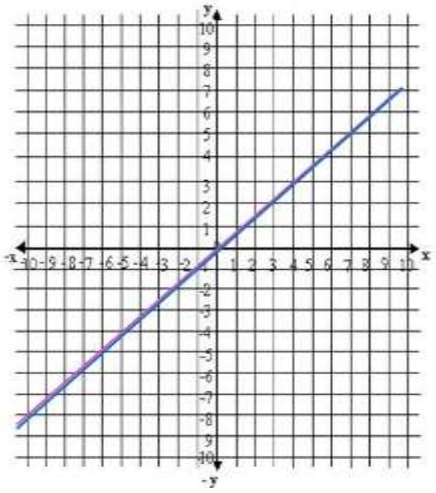
Unit 6 – Systems of Equations and Inequalities Test

Identify from the graph the solution of the system and determine if it is an independent, inconsistent or dependent system

1.



2.



Find the solution of the following systems by graphing

3. $\begin{cases} x + y = 4 \\ x - y = 2 \end{cases}$

4. $\begin{cases} 3x + 5y = 15 \\ 2x + 2y = 6 \end{cases}$

Find the solution of the following systems by substitution and determine if it is an independent, inconsistent or dependent system

5. $\begin{cases} x - y = 10 \\ x + 6y = 1 \end{cases}$

6. $\begin{cases} 5(x + 1) - 2y = 1 \\ y = 2 + x \end{cases}$

Find the solution of the following systems by elimination and determine if it is an independent, inconsistent or dependent system

7. $\begin{cases} 5x - y = 4 \\ x - y = 3 \end{cases}$

8. $\begin{cases} x + y = 4 \\ 5x - 4y = 6 \end{cases}$

Name: _____ Period: _____ Date: _____

Unit 6 – Systems of Equations and Inequalities Test

Solve the following verbal problems involving linear systems:

9. **A roll of 24 bills contains only $5 bills and $10 bills. If the value of the roll is $160, then how many of each bill are in the roll?**

10. **A chemist needs to prepare a solution combining a 20% alcohol solution with a 60% alcohol solution to form 200 ml of a 45% final solution. How much of each solution should be used to form the mixture?**

Express the following sets as intervals

11. $\{x|x \in R, 4 \leq x \leq 8\}$

12. $\{x|x \in R, x > -2\}$

13. $\{x|x \in R, 2 \leq x < 9\}$

Solve the following inequalities and graph its solution

14. $\frac{3x-4}{2} > 5$

15. $7x + 2 > 16$

16. $4(x + 6) < 2(x - 1)$

Solve the following inequalities and graph its solution

17. $\begin{cases} 3x + y \geq 0 \\ 2x + y \geq 0 \\ x \leq 2 \end{cases}$

18. $\begin{cases} x + y \geq 2 \\ -4x + y < 1 \end{cases}$

Name: _____ Period: _____ Date: _____

Unit 6 – Systems of Equations and Inequalities Test

Solve the following word problem:

19. **Jhon is preparing a party and he is buying the supplies at the Market. Regular sized boxes of spoons contain enough for 20 persons, while value-pack boxes contain enough for 30 persons. He needs at least enough spoons for the 60 guests who plan to attend. Write and graph a system of linear inequalities.**