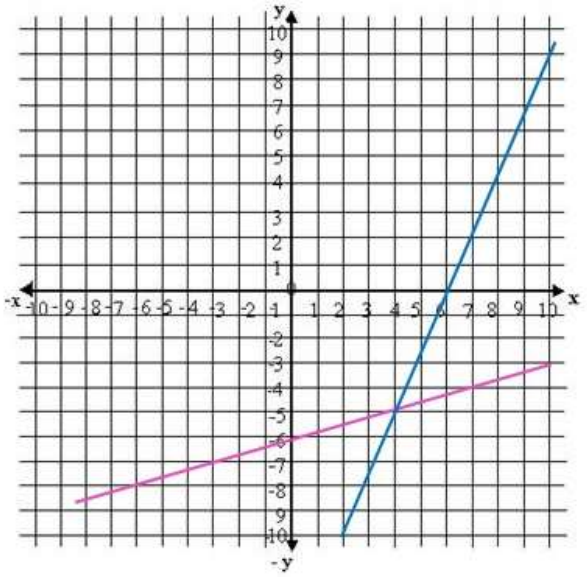
Name: _____ Period: _____ Date: _____

Unit 6 – Systems of Equations and Inequalities Test

1. **Identify from the graph the solution of the system and determine if it is an independent, Inconsistent or Dependent system.**



2. **Find the solution of the following system of equations by graphing.**

   $x + 4y = 1$

   $2x + y = -5$

3. **If two or more lines meet each other at one and only one point, the lines are called:**

   a. Concurrent
   b. Perpendicular
   c. Parallel
   d. None of these

4. **Find the solution of the following system of equation by substitution and determine if it is an independent, inconsistent or dependent system.**

   $x = 3y - 1$

   $3x - y = 2$

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5. **Find the solution of the following system of equation by substitution and determine if it is an independent, inconsistent or dependent system.**

   $2x + 4y = -6$

   $3x - y = 2$

6. **The method in which we substitute the value of one variable from one equation to another is known as:**

   a. Elimination method
   b. Substitution method
   c. Graphing method
   d. None of these

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

   $2x + 4y = -6$

   $x = 1 - 2y$

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

   $5x - 2y = 1$

   $x + 4y = 8$

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9. A system of equations having exactly one solution is known as:

a. Independent system
b. Inconsistent system
c. Dependent system
d. None of these

10. A total of $5500 was invested in two accounts. Part was invested in a CD at 2% annual interest rate and part was invested in a money market fund at 1% annual interest rate. If the total simple interest for one year was $100, then how much was invested in each account?

11. Mary traveled a total of 10 hours and a total of 1850 miles by car and by plane. Driving to the airport by car, she averaged 50 miles per hour. In the air, the plane averaged 300 miles per hour. How long did it take her to drive to the airport?

12. 800 tickets were sold for a Rock Music Concert with a total revenue of $7500. If adult tickets were sold for $12 and students tickets were sold for $8. How many of each type of ticket were sold?

13. Express the following interval as sets:

$(2, 10)$

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14. Express the following set as intervals:

$\{x|x \in R,\ 0 \leq x \leq 4\}$

15. Solve the following inequality and graph it

$4x + 6 \leq 2x + 10$

16. Solve the following inequality and graph it:

$2(x - 4) > x - 3$

17. Solve the following inequalities and graph its solution:

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

18. Jessica works as an online tutor for $6 per hour. She also works as an editor for $3. She is allowed to work 30 hours per week and she wants to make at most $60. Write and graph a system of linear inequalities.

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19. A system of inequalities has:

a. one point as solution
b. a region of solutions
c. no solution
d. None of these

20. Solve the following inequalities and graph its solution:

$$\begin{cases} y \geq 2x + 1 \\ y \geq -x + 3 \end{cases}$$