**Int Math 1 Mod 2 Practice Problems Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Per: \_\_\_\_\_**

For #1-5, match each system on the left with the corresponding graph on the right.

|  |  |  |
| --- | --- | --- |
| \_\_\_\_\_\_\_\_\_\_ 1.  | \_\_\_\_\_\_\_\_\_\_ 2.  | \_\_\_\_\_\_\_\_\_\_ 3.  |
| \_\_\_\_\_\_\_\_\_\_ 4.  | \_\_\_\_\_\_\_\_\_\_ 5.  |  |
| a.)  | b.)  |  c.)  |
| d.)  | e.) |  |

6. The point (-4 , 6) is a solution to which of the following system(s)? (Select all that apply)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| a. | b.  | c.  | d.  | e.  |

7. How many solutions might a *linear equation* have? Select all that apply.

|  |  |  |
| --- | --- | --- |
| a. None |  b. One | c. Infinite |

8. How many solutions might a *system of linear equations* have?Select all that apply.

|  |  |  |
| --- | --- | --- |
| a. None |  b. One | c. Infinite |

9. How many solutions might a *linear inequality* have? Select all that apply.

|  |  |  |
| --- | --- | --- |
| a. None |  b. One | c. Infinite |

10. How many solutions might a *system of inequalities* have? Select all that apply.

|  |  |  |
| --- | --- | --- |
| a. None |  b. One | c. Infinite |

|  |  |
| --- | --- |
| 11. Show all possible solutions to the equation on the graph. Label the *x*-intercept and *y*-intercept. | 12. Show all possible solutions to the system of inequalities on the graph.  |

13. Convert the following Standard Form equation to Slope-Intercept Form.

|  |  |  |
| --- | --- | --- |
| Standard Form |  | Slope-Intercept Form |
|  |  |

14. Convert the following Slope-Intercept Form equation to Standard Form.

|  |  |  |
| --- | --- | --- |
| Slope-Intercept Form |  | Standard Form |
|  |  |

15. Solve the following system of equations using all three methods (graphing, substitution, and elimination).

16. Three cans of soda and two bags of chips cost $2.72 and two cans of soda and four bags of chips cost $3.92. What is the cost of each item? Express the situation as equations, using ***c*** to represent the price of a can of soda and ***b*** to represent the price of a bag of chips. Solve your system of equations algebraically and write the solution in context of the problem. Verify your solution is correct by plugging in.

17. Mary loves to paint pastel and watercolor pictures.  Each pastel uses $7 in supplies and each watercolor uses
$10 in supplies.  Mary has no more than $80 to spend on supplies.  She has time to make at most 12 pictures. Express Mary’s constraints as inequalities, using ***p*** to represent the number of pastel pictures she makes and ***w*** to represent the number of watercolor pictures.

18. Old McDonald had a Cow farm, but is now considering branching into raising Chickens and Ducks. Everyday Mr. McDonald needs to collect at least 36 eggs, and he knows that each Duck lays 2 eggs, while each Chicken lays 3 eggs. But each week, every Duck eats 4 pounds of feed, while every Chicken eats 1 pound of feed. Mr. McDonald can afford no more than 32 pounds of feed. Mr. McDonald already has 12 chicken on his farm. Mr. McDonald can sell each Chicken egg for $0.50 and each Duck egg for $1.

1. Define your variables below. Identify and name your constraints in context. Use as many boxes as needed.

|  |
| --- |
| Define variables:  |
| Name of constraint:  | Identify constraint:  |
| Name of constraint:  | Identify constraint:  |
| Name of constraint:  | Identify constraint:  |
| Name of constraint:  | Identify constraint:  |
| Name of constraint:  | Identify constraint:  |

1. Graph the constraints on the coordinate plane below. Be sure to label and scale your axes appropriately. Clearly identify the feasible region.



c. Identify all of the coordinate points of the corners
 of the feasible region.

d. What combination of Chickens and Ducks with

 earn Mr. McDonald the greatest profit.