



- \*15 questions
- \*Calculators allowed
- \*Show all work/steps- use separate paper
- \*Recommend time frame 45min -60min

### Concept of Systems

1. True or False? Linear systems only have one equation.
2. Define the solution to a linear system in your own words.
3. Name three methods to solve a linear system.
4. Given any linear system- what could be the possible solutions? (hint: 3 types)
5. Give one example of a real-life situation that can be described as a system.

### Solving Systems

6. Determine if  $(2, -3)$  is a solution to the system: 
$$\begin{cases} 3x + 2y = 8 \\ 6x - 9y = 10 \end{cases}$$

7. Solve by graphing( graph paper needed): 
$$\begin{cases} -2x + 2y = 0 \\ x + y = -8 \end{cases}$$

8. Solve using the Substitution Method: 
$$\begin{cases} -x + y = 2 \\ y = 3x \end{cases}$$

9. Solve using the Substitution Method: 
$$\begin{cases} -6x - 2y = 2 \\ 4x + y = 1 \end{cases}$$

10. Solve using the Elimination/Linear Combination Method:  $\begin{cases} -2x + 2y = 6 \\ 3x - y = 3 \end{cases}$

11. Solve using the Elimination/Linear Combination Method:  $\begin{cases} 2x + 4y = 14 \\ 3x - y = 14 \end{cases}$

12. Solve the system by any method:  $\begin{cases} 8x - y = -1 \\ -10x + 2y = 5 \end{cases}$

13. Graph the system of linear inequalities:  $\begin{cases} 4x - 5y < -28 \\ -4x + y \geq -4 \end{cases}$

14. In your own words describe the procedure in Linear Programming to find the maximum or minimum value of a constraint function.

15. The difference of two numbers is 8. Also, the sum of these same numbers is 32. What are the numbers?