Name: _____ **Date:**_____

1. Listening:

What's a System of Linear Equations?

A system of equations is a set of equations with the same (1) variables. If the equations are all linear, then you have a system of linear equations! To (2) solve a system of equations, you need to figure out the variable (3) values that solve all the equations involved. There are many different (4) ways to solve a system of linear equations.

Substitution Method for Solving Systems of Equations with Two Equations

1. (5) Choose one equation and isolate one variable; this equation will be (6) considered the first equation.
2. Substitute the solution from step 1 into the second equation and solve for the variable in the equation.
3. Using the value (7) found in step 2, substitute it into the first equation and solve for the second variable.
4. Substitute the values for both variables into both equations to show they are correct.

Steps in solving word problems with linear equations

1. (8) Define the variables that you want to find with let statements.
2. Create equations that express the information given in the problem's scenario.
3. Solve your system using algebraic (9) methods.
4. Consider if you answer is (10) reasonable.
5. Label your solution appropriately.
6. Check your answer with the conditions given in the problem.

2. Kristin spent $131 on shirts. Fancy shirts cost $28 and plain shirts cost $15. If she bought a total of 7 then how many of each kind did she buy?

3. There are 13 animals in the barn (*granero*). Some are chickens and some are pigs. There are 40 legs in all. How many of each animal are there?

4. A farmhouse has 10 animals. Some are pigs and some are ducks. Altogether there are 36 legs. How many of each animal are there?

5. A class of 195 students went on a field trip. They took 7 vehicles, some cars and some buses. Find the number of cars and the number of buses they took if each car holds 5 students and each bus hold 45 students.

6. A farmhouse shelters 11 animals. Some are goats and some are ducks. Altogether there are 34 legs. How many of each animal are there?

7. All 231 students in the Math Club went on a field trip. Some students rode in vans which hold 7 students each and some students rode in buses which hold 25 students each. How many of each type of vehicle did they use if there were 15 vehicles total?

8. At Elisa's Printing Company LLC there are two kinds of printing presses: Model A which can print 70 books per day and Model B which can print 55 books per day. The company owns 14 printing presses and this allows them to print 905 books per day. How many of each type of press do they have?

9. Dalton has 7 bills, all tens and twenties, that total $100 in value. How many of each bill does he have?

10. Galina spent $3.60 for stamps to mail packages. Some were $0.30 stamps and the rest were $0.20 stamps. The number of $0.20 stamps was 2 less than the number of $0.30 stamps. How many stamps of each kind did Galina buy?

11. Harold had a summer lemonade stand where he sold small cups of lemonade for $1.25 and large cups for $2.50. If Harold sold a total of 155 cups of lemonade and collected a total of $265, how many cups of each type did he sell?

12. Cadence has a collection of 52 dolls that all have either blue eyes or green eyes. Cadence has 16 more blue-eyed dolls than green-eyed dolls. How many dolls of each type does she have?

13. Andre has more money than Bob. If Andre gave Bob $20, they would have the same amount. While if Bob gave Andre $22, Andre would then have twice as much as Bob. How much does each one actually have?

14. Julie has 81 pieces of jewellery. She has twice as many earrings (*pendientes*) as she has necklaces (*collares*). How many earrings does she have?

15. An exam worth 145 points contains 50 questions. Some of the questions are worth two points and some are worth five points. How many two point questions are on the test? How many five point questions are on the test?

16. Your teacher is giving you a test worth 100 points containing 40 questions. There are two-point and four-point questions on the test. How many of each type of question are on the test?

17. The Lakers scored a total of 80 points in a basketball game against the Bulls. The Lakers made a total of 37 two-point and three-point baskets. How many two-point shots did the Lakers make? How many three-point shots did the Lakers make?

18. Sarah is the director of the Hoonah marching band. She must order 35 new uniforms for the band. There are usually five more girls than twice the number of boys in the band. How many uniforms of each type should she order for the band?

19. At the "Great Hair Barber Shop" Nita and Joe do a total of 95 haircuts each week. If Nita does 16 fewer than twice as many as Joe, how many haircuts does each person do?

20. Mary's father is four times as old as Mary. Five years ago he was seven times as old. How old is each now?

21. The sum of Kate's age and her mother's age is 52. Kate's mother is 20 years older than Kate. How old is each?

22. Tyler is catering a banquet for 250 people. Each person will be served either a chicken dish that cost $5 each or a beef dish that costs $7 each. Tyler spent $1500. How many dishes of each type did Tyler serve?

23. The perimeter of a rectangle is 86 cm. Twice the width exceeds the length by 2 cm. Find the dimensions of the rectangle.

24. The difference of two numbers is 11. Their sum is 45. Find the numbers.