Essential Question: How do we solve systems word problems?

Do Now: Solve the following word problem. *Make sure you define the variables.*

The perimeter of a rectangle is 94 cm. The length is 7 cm more than the width. Find the length and the width of the rectangle.

2nd Method (Using a linear system)

How do we solve a problem using a linear system?

1. The sum of two numbers is 7. Three times one of the numbers is 17 more than the other. Find both numbers.

2. Nancy and Pete were selling tickets to the upcoming Spotlight show, The Sound of Music. Pete sold 6 adult and 15 student tickets for a total of $96.00. Nancy sold 8 adult and 7 student tickets for a total of $76.00. What was the price of each ticket?

3. Maggie has 15 coins in her pocket consisting of dimes and quarters. If Maggie has $2.25 in her pocket, find the number of each type of coin.

4. Alex invested $10,000 in stocks and bonds. The bonds earned 5% and the stocks earned 7%. The total income from these investments is $540.00. How much money was invested at each rate?

5. A sporting goods store sells 12 baseball gloves, some of which are right handed and some of which are left handed. Right handed gloves cost $45.00 each and left handed gloves cost $52.00 each. The total revenue from the gloves sold was $561.00. How many of each type was sold?

On a separate sheet of paper, solve each of the following word problems by setting up a linear system and use either linear combinations or substitution to solve.

1. Bruce has $5.50 in dimes and quarters. He has 8 more quarters than dimes. How many quarters does he have?

2. The sum of two numbers is 100. Five times the smaller is 8 more than the larger. Find the numbers.

3. Lisa and Kristen had just $5.00 to spend for an after-school snack. They could have bought 2 hamburgers and 1 carton of milk with no change back or 1 hamburger and 2 cartons of milk with 40 cents change back. How much does a carton of milk cost?

4. Karen invested $9000 in stocks and bonds. The stocks paid 5% and the bonds paid 8%, giving an annual income of $525.00. How much did she invest in bonds?

5. 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?

6. Cory has $24 more than twice as much as Stan. Together they have $150. How much money does each have?

7. The sum of two numbers is 25 and their difference is 7. Find the numbers.

8. A discount movie theater charges $5 for an adult ticket and $2 for a child's ticket. One Saturday, the theater sold 785 tickets for $3280. How many children's tickets were sold?

9. A grocer mixes together some cashews costing $8 per kilogram with some macadamia nuts costing $10 per kilogram. The grocer sold 12 kg of the mixture for $8.50 per kilogram. How many kilograms of cashews were in the mixture that the grocer sold?