Unit IV – First Degree Relations with Three or More Placeholders
Part C – Problem Solving Using Three or More Placeholders
Lesson 4 – "Value" or "Mixture" Problems

For each of the following story problems, answer the four analysis questions to find the system of equations needed to solve. Then solve and use common sense to check your answer.

1. Charlene has $2.95 in half-dollars, dimes, and nickels in her coin collection. The number of half-dollars is, 1 less than twice the number of dimes. The sum of the number of half-dollars and the number of nickels is 8. Find the number of coins of each type.

2. A sporting goods store sells three types of sweatshirts: a pullover for $6, A hooded sweatshirt for $7, and a zipper-fronted sweatshirt for $8. During a week in which the store sold 137 sweatshirts, the sale of hooded sweatshirts exceeded those of pullovers by $40, and the sale of zipper-fronted sweatshirts exceeded those of hooded sweatshirts by $30. How many of each type of sweatshirt were sold that week?

3. A business club split a $75,000 investment into three accounts. The first account grew 8%, the second grew 10%, and the third grew 11%. Total earnings from the three accounts was $7100. The first account earned $620 more than the third account. How much was invested in each account?

4. Bob has 12 coins in dimes, nickels, and quarters.The dimes and nickels are valued at $0.85. The dimes and quarters have a total value of $1.20. Find the number of coins of each type.

5. If Joan buys six apples, five bananas, and two oranges, the cost will be $2.85. If she buys three apples, seven bananas, and four oranges, the cost will be $2.70. If apples are one cent less than twice as expensive as oranges, what is the cost of each?

6. Delmar's Drive-In sells ice cream cones in the following sizes: single dip, $.49; double dip, $.79; triple dip, $.99. One afternoon, a total of 52 ice cream cones were sold. Two more than twice as many doubles as triples were sold. Sales revenue totaled $38.18. How many of each size cone were sold?

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1. She has 5 half-dollars, 3 dimes, and 3 nickels.

2. 47 pullover, 46 hooded, and 44 zipper-front sweatshirts were sold.

3. *F* (first account) = $27,000
    S (second account) = $34,000
    T (third account) = $14,000

4. The number of quarters is 2. The number of dimes is 7. The number of nickels is 3.

5. The cost of an apple is $.27. The cost of an orange is $.14. The cost of a banana is $.19

6. There were 9 double-dip ice cream cones sold. There were 20 triple-dip ice cream cones sold.
    There were 23 single-dip ice cream cones sold.