

Cash Out



Use the questions below to write a set of equations to solve the problems. Do not solve.

Duke cleared the cash register of nickels and dimes. There were twenty coins in all, and the total value of the coins was \$1.35. How many of each type of coin were in the cash register? Let's analyze the problem...



1) We are being asked to find the number of _____ and _____.

2) Since we are finding the number of _____ and _____ these are our two variables. We are going to assign _____ the letter _____ and _____ the letter _____.

3) The two totals we are given are _____ coins and \$ _____.

Because we have been given two variables to solve for, and two totals, we will need to write two equations.

Equation 1 – Total Number of Coins

Equation 2 – Total Value of Coins

$$\frac{\text{total coins}}{\text{total coins}} = \frac{\text{nickels}}{\text{nickels}} + \frac{\text{dimes}}{\text{dimes}} \quad \frac{\text{total value of coins}}{\text{total value of coins}} = \frac{\text{nickel value}}{\text{nickel value}} + \frac{\text{dime value}}{\text{dime value}}$$

Try one more on your own: Your uncle walks in, jingling the coins in his pocket. He grins at you and tells you that you can have all the coins if you can figure out how many of each kind of coin he is carrying. You're not too interested until he tells you that he's been collecting those gold-tone one-dollar coins. The twenty-six coins in his pocket are all dollars and quarters, and they add up to seventeen dollars in value. How many of each coin does he have?



1) We are being asked to find the number of _____ and _____.

2) Since we are finding the number of _____ and _____ these are our two variables. We are going to assign _____ the letter _____ and _____ the letter _____.

3) The two totals we are given are _____ coins and \$ _____.

Equation 1 – Total Number of Coins

Equation 2 – Total Value of Coins

$$\frac{\text{total coins}}{\text{total coins}} = \frac{\text{dollars}}{\text{dollars}} + \frac{\text{quarters}}{\text{quarters}}$$

$$\frac{\text{total value of coins}}{\text{total value of coins}} = \frac{\text{dollar value}}{\text{dollar value}} + \frac{\text{quarter value}}{\text{quarter value}}$$



Challenge: Solve the second problems' system of equations by the substitution or elimination method.