

3. Let x = amount borrowed at 7%, y = amount borrowed at 8%, z = amount borrowed at 10%.

$$\begin{cases} x+y+z=1,500,000 \\ .07x+.08y+.10z=130,500 \\ -4y+z=0 \end{cases}$$

$$\begin{aligned} z &= 4x \\ -4x+z &= 0 \end{aligned}$$

The corporation borrowed ~~\$519,230.77~~ ^{\$150,000} at 7%, ~~\$196,153.85~~ ^{\$750,000} at 8%, and ~~\$784,615.38~~ ^{600,000} at 10%.

4. Let c = amount invested in CDs, b = amount invested in bonds, g = amount invested in growth funds (To have the least amount possible in growth funds, we need the money that doesn't go there to go in a higher interest paying fund. Bonds pay higher interest than CDs; so, no money will go into CDs).

$$\begin{cases} b+g=50000 \\ 0.087b+0.146g=5000 \end{cases}$$

Morgan should place \$38983.05 in bonds and \$11016.95 in growth funds.

5. Let n = # of nickels, d = # of dimes, q = # of quarters.

$$\begin{cases} n+d+q=74 \\ .05n+.10d+.25q=8.85 \\ n-d+q=4 \end{cases}$$

There are 22 nickels, 35 dimes, and 17 quarters.

6. Let x = # of \$1 bills, y = # of \$5 bills, z = # of \$10 bills.

$$\begin{cases} x+y+z=51 \\ x+5y+10z=177 \\ y-3z=0 \end{cases}$$

There are 27 \$1 bills, 18 \$5 bills, and 6 \$10 bills.

Part C

1. Variable definitions are given
 - b. This equation shows that the final solution contains 60 liters after adding all three parts
 - c. The equation shows the percentage of each solution that combines to make the final solution. 24 is 40% of 60.
 - d. This equation shows that if we double the amount of the 55% solution, we get the same amount of the 35% solution.