

Math 111 Write Up Week 10

Remember this problem from last week? We're going to solve it again using matrices and Desmos. (It's a lot less tedious!)

It's Thanksgiving and your Uncle Buck gives you a bucket of coins as a gift. In the bucket you see quarters, nickels, and golden dollars. He tells you there is \$157 in the bucket and you count a total of 740 coins. If there are twice as many nickels as quarters, how many of each type are in the bucket?

Let Q = number of quarters, N = number of nickels, and D = number of golden dollars.

1. Set up 3 equations with the 3 given variables above. (Make sure you look at last week's key and have the equations correct!)
(Hint: If you want to take 5 cents, it's .05 dollars. Many people put .5 by accident.)
2. Put the system of equations into an augmented matrix. Write the matrix down here:
3. Solve the system using the [Desmos matrix calculator](#). You may use screenshots to put your answer to the following questions, or you may write it down.
 - a. Show how you put your matrix in the desmos matrix calculator.
 - b. Use the command rref on your matrix to put the matrix into reduced row echelon form.
 - c. Answer the question, how many of each type are in the bucket?
 - d. True or False: Desmos is awesome.