NAME: _____KEY_____ ONLY TURN THIS IN IF YOU FORGOT YOUR CLICKER

Formulating Linear Systems

You have a total of $86 in one-, five- and ten-dollar bills. There are 27 bills. You have twice as many ones as fives. How many of each type of bill do you have?

1. Note the sentence that begins with "How many". What are the variables?

x = the number of one-dollar bills

y = the # of five-dollar bills

z = # of ten-dollar bills

2. Write an equation for the statement "There are 27 bills." x+y+z=27

3.

a. If you have 3 five-dollar bills, how much are these 3 bills worth? 15

b. If you have y five-dollar bills, how much money do you have? 5y

c. Write an equation for the statement "You have a total of $86 in one-, five-, and ten-dollar bills." x+5y+10z=86

4.

a. Are there more one-dollar bills or more five-dollar bills? (A) More ones (B) More fives

b. If you have two one-dollar bills, how many five-dollar bills do you have? 1 fives

5. What is an equation that represents the ratio of one-dollar bills to five-dollar bills? 2y=x or y=x/2

6. Write the complete system of equations for this problem.

Equation for the total number of bills: x+y+z=27

Equations for the total value of the bills: x+5y+10z=86

Equation for the ratio of ones to fives: 2y=x

7. How many of each type of bill do you have?

I have 16 ones, 8 fives, and 3 tens.