For each of the following: 1. Define your variable  2. Write the equations 3. **Rewrite** as a system in order 4. **Make matrices** 5. Write answers in **word form**!!! If you do not follow these steps, you will **NOT** receive full credit.

1. **Marina had $24,500 to invest. She divided the money into three different accounts. At the end of the year, she had made $1,300 in interest. The annual yield on each of the three accounts was 4%, 5.5%, and 6%. If the amount of money in the 4% account was four times the amount of money in the 5.5% account, how much had she placed in each account?**

   Define variable
   write equations
   **REWRITE as systems**
   Matrices

   A=  
   B= 

   $________ was invested in the 1st account  $________ was invested in the 2nd account  $________ was invested in the 3rd account

2. **Billy’s Restaurant ordered 200 flowers for Mother’s Day. They ordered carnations at $1.50 each, roses at $5.75 each, and daisies at $2.60 each. They ordered mostly carnations, and 20 fewer roses than daisies. The total order came to $589.50. How many of each type of flower was ordered?**

   Define variable
   write equations
   **REWRITE as systems**
   Matrices

   A=  
   B= 

3. **The Arcadium arcade in Lynchburg, Tennessee uses 3 different colored tokens for their game machines. For $20 you can purchase any of the following mixtures of tokens: 14 gold, 20 silver, and 24 bronze; OR, 20 gold, 15 silver, and 19 bronze; OR, 30 gold, 5 silver, and 13 bronze. What is the monetary value of each token?**

   Define variable
   write equations
   **REWRITE as systems**
   Matrices

   A=  
   B= 

4. **Last Tuesday, Regal Cinemas sold a total of 8500 movie tickets. Proceeds totaled $64,600. Tickets can be bought in one of 3 ways: a matinee admission costs $5, student admission is $6 all day, and regular admissions are $8.50. How many of each type of ticket was sold if twice as many student tickets were sold as matinee tickets?**

   Define variable
   write equations
   **REWRITE as systems**
   Matrices

   A=  
   B=  

   **_Note:_** The problem is designed to be solved using matrices, but the matrices are not filled in as part of the problem statement.
5. Annette, Barb, and Carlita work in a clothing shop. One day the three had combined sales of $1480. Annette sold $120 more than Barb. Barb and Carlita combined sold $280 more than Annette. How much did each person sell?

Define variable | write equations | REWRITE as systems | Matrices
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6. A triangle has one angle that measures 5° more than twice the smallest angle, and the largest angle measures 11° less than 3 times the measure of the smallest angle. Find the measures of the three angles.

Define variable | write equations | REWRITE as systems | Matrices
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7. Souvenir hats, T-shirts, and jackets are sold at a rock concert. Three hats, two T-shirts, and one jacket cost $140. Two hats, two T-shirts, and two jackets cost $170. One hat, three T-shirts, and two jackets cost $180. Find the prices of the individual items.

Define variable | write equations | REWRITE as systems | Matrices
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MAKE a MATRIX then solve the following systems with a calculator.

8. \[ 4x + 2z = 12 \quad 2y = 3x + 3z - 5 \quad y = 2x + 7z + 8 \]

\[ A = \begin{pmatrix} \quad \end{pmatrix} \quad B = \begin{pmatrix} \quad \end{pmatrix} \]

\[ x = \_ \quad y = \_ \quad z = \_ \]

9. \[ 3x + 2z = 11 \quad y - 7z = 4 \quad x - 6y = 1 \]

\[ A = \begin{pmatrix} \quad \end{pmatrix} \quad B = \begin{pmatrix} \quad \end{pmatrix} \]

\[ x = \_ \quad y = \_ \quad z = \_ \]