Chapter 3 Tiered Activities: Linear Systems of Equations   **SHOW ALL WORK!**

Objectives

A2.A.REI.C.4 Write and solve a system of linear equations in context.
A2.A.REI.D.6 Explain why the *x*-coordinates of the points where the graphs of the equations $y =$ f(*x*) and $y =$ g(*x*) intersect are solutions of the equation f(*x*) = g(*x*), find the appropriate solutions using technology.

Tier 1 (up to 75 points)- For each problem, complete the following.

     a.   Define your variables and create a system of equations that represents the situation.
     b.   Choose an appropriate method and solve the system of equations.
     c.   State your solution in the context of the problem.

Tier 2 (up to 90 points)- For each problem, complete the following.

     a.   Define your variables and create a system of equations that represents the situation.
     b.   Choose an appropriate method and solve the system of equations.
     c.   State your solution in the context of the problem.
     d.   State what values would be appropriate for the domain and range.
     e.   Verify your solution by using a different method for solving.

Tier 3 (up to 100 points)- For each problem, complete the following.

     a.   Define your variables and create a system of equations that represents the situation.
     b.   Choose an appropriate method and solve the system of equations.
     c.   State your solution in the context of the problem.
     d.   State what values would be appropriate for the domain and range.
     e.   Verify your solution by using a different method for solving.
     f.   Analyze your system and its' solution by stating what the *x*- and *y*- intercepts would represent.

Systems of Equations

     1.   CHS is selling tickets for the homecoming dance. The tickets are $5 if purchased early, but $7 at the door. The school made $835 by selling 137 tickets. How many tickets were sold at the door?

2. Kim and Brittany are selling chocolate chip cupcakes and red velvet cupcakes. Kim made $81 selling 18 chocolate chip cupcakes and 12 red velvet cupcakes. Brittany made $77 by selling 2 chocolate chip cupcake and 24 red velvet cupcakes. What was the price of each type of cupcake?

3. Nayeli is raising money for the Salsa Club by selling tickets for the dance. Adult tickets are $5 and children's tickets are $3. The club made $95 by selling 25 tickets. How many adults and children attended the dance?

4. Jason sold 3 CD's and 4 DVD's for $47 on Tuesday. Wednesday he sold 3 CD's and 3 DVD's for $39. How much is each CD? How much is each DVD?

5. Sony released two versions of a new video game console. The basic console sells for $349.99 and the limited edition sells for $429.99. GameStop reported selling a total of 118 consoles in November totaling $45778.82.

6. The perimeter of the square is 72 units. What are the values of x and y?
   (Hint: $P = 2l + 2w$) (Note: Only complete parts a, b, d & e for this problem)

$3y$

$2x$