Name: _____ Class: _____ Date: _____ ID: A

Practice Quiz #1 Assignment: Solving Complex Systems of Equations & Inequalities and Applications (Reference: Lesson #29 & #43 in book)

Problem

1. **For each of the following systems of three equations, please solve the system of equations, state your solution as a three dimensional coordinate point, and determine the classification (Consistent or Inconsistent) of the system of equations.(SHOW ALL OF YOUR WORK.)**

   1. $4x - 4y + 4z = -4$

      $4x + y - 2z = 5$

      $-3x - 3y - 4z = -16$

2. $-6x - 2y + 2z = -8$

   $3x - 2y - 4z = 8$

   $6x - 2y - 6z = -18$

3. **For each of the following application word problems, please create three equations from the given information and then solve the system of three equations. (SHOW ALL OF YOUR WORK.)**

   3. Andrea sells photographs at art fairs. She prices the photos according to size: small photos cost \$10, medium photos cost \$15, and large photos cost \$40. She usually sells as many small photos as medium and large photos combined. She also sells twice as many medium photos as large. A booth at the art fair costs \$300. If her sales go as usual, how many of each size photo must she sell to pay for the booth and break even?

4. **For each of the following systems of Inequalities, please determine whether the given point is a solution to the system of Inequalities or not. (SHOW ALL OF YOUR WORK.)**

   4. $(-4,-2)$

      $3x - 7y \geq 2$

      $-3x + 2y > 7$

5. $(2,3)$

   $-4x - 3y < -15$

   $5x - 3y \geq 5$

6. **For each of the following systems of inequalities with two inequalities, please solve the system by graphing method and expression the solution by shading the solution region. (SHOW ALL OF YOUR WORK.)**

   6. $4x + 5y \geq 20$

      $2x - 4y \leq 12$

7. **For each of the following systems of inequalities with three inequalities, please solve the system by graphing method and expression the solution by shading the solution region. (SHOW ALL OF YOUR WORK.)**

   7. $-12x + 4y \leq 4$

      $-3x + 6y \geq 18$

      $y < 7$

8. $-6x + 2y \leq -4$

   $-3x - 9y > -27$

   $-3x + 4y \geq -20$