

**Quiz #1 Review Assignment #1: Solving Complex Systems of Equations and Applications
(Reference: Lesson #29, #43, #45 & #54 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. $-5x + 3y + 6z = 4$

$-3x + y + 5z = -5$

$-4x + 2y + z = 13$

2. $3x - 5y + 2z = 10$

$x + y - 4z = 9$

$2x + 2y - 8z = 1$

3. $-12x - 4y - 2z = -34$

$10x + 2y - 12z = 38$

$-4x - 6y - 6z = -20$

4. $4x + 8y - 2z = 16$

$3x + 15y + 3z = 0$

$6x + 12y - 3z = 24$

5. 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.)

5. Five hundred tickets were sold for a certain music concert. The tickets for adults sold for \$7.50, the tickets for children sold for \$4.00, and tickets for senior citizens sold for \$3.50. The revenue for the Monday performance was \$3,025. Twice as many adult tickets were sold as children tickets. How many of each type of ticket were sold for Mondays performance?

6. A person invests \$5,400 for one year; some is invested at 12%, some at 15%, and the remainder at 18% interest. The combined interest earned at the end of the year from the investments was \$822. The amount invested at 12% is \$2,600 less than the amounts invested at 15% and 18% combined. What is the amount of money invested at each rate?
7. The second angle of a triangle is 50 degrees less than 4 times the first angle. The third angle is 40 degrees less than the first. What are the measures of the three angles in this triangle? (HINT: Drawing a picture might help.)