Systems of Equations
1010 Final Review Session

Review at least one problem from each section

1) Part I: Systems of Two Equations

Solve the system using either the substitution or elimination method:

$$\begin{aligned} 6x + 4y &= -14 \\ x - 2y &= -13 \end{aligned}$$

2) Solve the system using either the substitution or elimination method:

$$\begin{aligned} 5x + y &= 3 \\ -15x - 3y &= -8 \end{aligned}$$

3) Solve the system using either the substitution or elimination method:

$$\begin{aligned} 2x - 4y &= -4 \\ 4x + 5y &= -21 \end{aligned}$$

4) Part II: Systems of Three Equations

Solve the system for x only :

$$2x - 2y - z = 8$$
$$6x - 3y - 3z = 27$$
$$-3x - 5y - z = -15$$

5) Solve the system for x,y,z:

$$x + 2y - z = 4$$
$$4x - 3y + z = 8$$
$$5x - y = 12$$

6) Solve the system for x,y,z:

$$-x + 2y + 4z = -20$$
$$-2x - 2y - 3z = 5$$
$$4x - 2y - 2z = 26$$

7) Part III: Word Problems Involving Systems of Equations

A coffee distributor needs to mix a coffee blend that normally sells for $8.90 per pound with another coffee blend that normally sells for $11.30 per pound. If the distributor wishes to create 70 pounds of coffee that can sell for $11.16 per pound, how many pounds of each kind of coffee should the mix?

8) Soybean meal is 16% protein and corn meal is 9% protein. How many pounds of each should be mixed to get a 350-lb mixture that is 12% protein?

9) A certain grade of milk contains 10% butter fat and a certain grade of cream 60% butter fat. How many quarts of each must be taken so as to obtain a mixture of 100 quarts that will be 45% butter fat?

10) The attendance at a school concert was 578. Admission was $2.00 for adults and $1.50 for children. The total receipts were $985.00. How many adults and how many children attended?