Quiz 4, Chapter 4

KEY

- 1. Solve the system of equations
- x-3y = -5in two ways: 4x-2y = 6
 - a. (4 pts) Substitution

$$x=3y-5$$
 $4(3y-5)-2y=6$
 $12y-20-2y=6$
 $10y-20=6$

$$y = \frac{26}{10} = \frac{13}{5} = \frac{13}{5}$$

$$x = 3(\frac{13}{5}) - 5$$

$$= \frac{39}{5} - \frac{25}{5} = \frac{14}{5} = X$$

b. (4 pts) Elimination

$$-4R1 - 4x + 12y = 20$$

$$R2 4x - 2y = 6$$

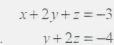
$$10y = 26$$

$$y = \frac{26}{10} = \frac{13}{3} = y$$

2. (4 pts) Which of the following systems has no solution, and which has infinitely many solutions?

Bonus 4 pts: For the one with infinitely many solutions, state the general solution and a particular solution.

Bonus 2 pts: For the one with NO solution, point out the absurdity that leads you to this conclusion



$$y + 2z = -4$$
$$0 = 0$$

$$2x-3y+7x$$

$$2y - 5z = 12$$

No Solm

Bonns

Partirular: Let ==03

{(32+5, -22-4, 2) | ZEIR { = Gen'l Solm

3. (4 pts) **Set It Up:** Cashews are worth \$3.83 per pound. Almonds cost \$2.51 per pound. How many pounds of each should be mixed together to obtain 10 pounds of a mixture worth \$2.84 per pound?

SOLVE for 4 Bonus Pts.

TOTAL

$$X + y = 10$$

PRICE 3.83x +2.5 14 = 10(2.84)



BONUS = 10-4

$$-132y = -990$$

Must do more than guess-and-check

4. (4 pts) Find the unique solution for the system of Linear Equations, by the elimination method:

$$x - y - 3z = 7$$

$$2x - y - 4z = 9$$

$$x - 4y - 10z = 26$$

$$-R1+R3$$
 $-3y-72=19$

$$x-y-3z=7$$

$$\begin{array}{c} x+q=7 \\ x=-2 \end{array}$$

$$(x,y,z) \in \{(-2,3,-4)\}$$