Solve this system of equations:

$y = -2x + 5$ $\qquad 8x + 4y = -12$

$8x + 4(-2x + 5) = -12$

$8x - 8x + 20 = -12$

$20 = -12$

NO SOL

Solve this system of equations:

$y = -\frac{4}{3}x + 7$

$8x + 6y = 42$

$8x + 6\left(-\frac{4}{3}x + 7\right) = 42$

$8x - 8x + 42 = 42$

$42 = 42$

Many Solutions

4. In your piggy bank you have only nickels and dimes. There are a total of 31 coins that total $2.25

a) Write a system of equations involving n for nickels and d for dimes.

$n + d = 31$ $\qquad .05n + .10d = 2.25$

$d = 31 - n$

b) Solve this system of equations to find the number of each kind of coin.

$.05n + .10(31 - n) = 2.25$

$.05n + 3.1 - .10n = 2.25$

$-.05n + 3.1 = 2.25$

$-3.1 \quad -3.1$

$\frac{-.05n}{-.05} = \frac{-.85}{-.05}$

$n = 17$

$n = 17$

$d = 14$

$17 + d = 31$

$d = 14$

Hwk #33

Pages 350-351

Problems 9, 10, 13, 18, 22, 24, 39, 41-43

Due Thursday

Would this system of equations be easy to solve using substitution?

$2x + 5y = 3$ $\qquad$ $3x - 5y = 17$

No, no matter which variable you tried to solve for it would result in having to use either fractions or decimals.

Sec 7-3: Solving systems of equations using ELIMINATION

Solving by elimination may involve:

- Just adding or subtracting the two equations
- Multiplying one of the equations by a constant then adding or subtracting.
- Multiplying both eqUations by a constant then adding or subtracting.

Solve this system of equations using ELIMINATION

$$\begin{array}{r} 2x + 5y = 3 \\ +\ 3x - 5y = 17 \\ \hline 5x = 20 \end{array}$$

add the equations to eliminate y.

$x = 4$

Use one of the equations to replace x with 4 and solve for y.

$2(4) + 5y = 3$

$8 + 5y = 3$

$-8 \quad -8$

$\frac{5y}{5} = \frac{-5}{5}$

$y = -1$

$(4, -1)$

Solve this system of equations using Elmination.

$3E - 2F = 1$ $\qquad$ $7E - 2F = -3$

$$\begin{array}{r} 3E - 2F = 1 \\ -\ 7E - 2F = -3 \\ \hline -4E = 4 \end{array}$$

subtract the equations to eliminate F.

$\frac{-4E}{-4} = \frac{4}{-4}$

$E = -1$

Use one of the equations to replace E with -1 and solve for F.

$3(-1) - 2F = 1$

$-3 - 2F = 1$

$+3 \quad +3$

$\frac{-2F}{-2} = \frac{4}{-2}$

$F = -2$

$(-1, -2)$