5/14 MON | 6.2 | ..... Continued....

Elimination - another algebraic method for solving systems of equations

→ "get rid of variables"

✓ add (subt) multiples of a row w/ another

✓ Goal: same or opposite terms

ex 2) Use elimination to solve....

$$\begin{array}{rl} & 3x - 2y = 4 \\ (+) & 4x + 2y = 10 \\ \hline & 7x \quad = 14 \\ & \frac{7x}{7} = \frac{14}{7} \\ & x = 2 \end{array}$$

✓ notice the columns are lined up!

* substitute answer into an equation

$$3(2) - 2y = 4$$
$$6 - 2y = 4$$
$$-6 \qquad -6$$
$$-2y = -2$$
$$\frac{-2y}{-2} = \frac{-2}{-2}$$

$y = 1$ ∴ $(2,1)$

Your Turn

Use elimination....

$$\begin{array}{rl} & x + y = 7 \\ (+) & 2x - y = -1 \\ \hline & 3x \quad = 6 \\ & \frac{3x}{3} = \frac{6}{3} \\ & x = 2 \end{array}$$

$$(2) + y = 7$$
$$2 + y = 7$$
$$-2 \qquad -2$$
$$y = 5$$

∴ $(2,5)$

ex 3) Use elimination....

$$3x + y = 6$$
mult by -3 $\quad (x - 2y = 9)$

$$3x + y = 6$$
$$(+)\ -3x + 6y = -27$$

$$\frac{7y}{7} = \frac{-21}{7}$$

$$y = -3$$

$$3x + (-3) = 6$$
$$3x - 3 = 6$$
$$+3 \quad +3$$
$$3x = 9$$
$$x = 3 \quad \therefore (3, -3)$$

$$(3x + y = 6)$$ mult by 2
$$x - 2y = 9$$

$$6x + 2y = 12$$
$$x - 2y = 9$$

$$\frac{7x}{7} = \frac{21}{7}$$

$$x = 3$$

$$(3) - 2y = 9$$
$$3 - 2y = 9$$
$$-3 \quad -3$$
$$\frac{-2y}{-2} = \frac{6}{-2}$$
$$y = -3 \quad \therefore (3, -3)$$