Solve this system of equations.

$y = 2x^2 + 7x - 1$

If you subtract the equations you will eliminate y allowing you to solve for x.

$- \quad y = x^2 + x - 9$

$0 = x^2 + 6x + 8$

$(x+4)(x+2) = 0$

$x = -4, -2$

$X \begin{array}{|c|c|} \hline x^2 & +4x \\ \hline +2x & +8 \\ \hline \end{array}$

$(-4, 3)$
$(-2, -7)$

Solve this system of equations. Give your answer as an ordered TRIPLE

Sustitute 2z for y in the third equation. Then use the 2nd eq and new 3rd eq to creat a system of equations with just x and z. Solve this system of x or z, then finish by finding the other variables.

$y = 2z$

$5x + 6z = -1$

$2x + 7y + 8z = 29$

$2x + 7(2z) + 8z = 29$
$14z + 8z$

$2x + 22z = 29$

$2(5x + 6z = -1)$
$5(2x + 22z = 29)$

$10x + 12z = -2$
$-10x + 110z = 145$

$\dfrac{-98z}{-98} = \dfrac{-147}{-98}$

$z = 1.5$

$y = 2(1.5)$
$y = 3$

$5x + 6(1.5) = -1$
$5x + 9 = -1$
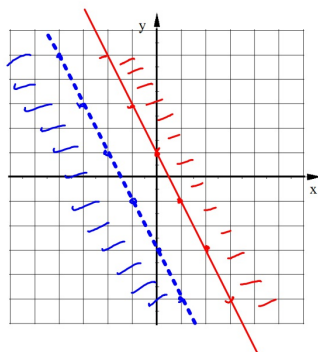$5x = -10 \rightarrow x = -2$

Sol:
$(-2, 3, 1.5)$

Graph this system of inequalities.

$y \geq -2x + 1$

$12x + 6y < -18$

$y < \dfrac{-18 - 12x}{6}$

$y < -3 - 2x$

since the two shaded areas don't overlap there is NO SOLUTION.

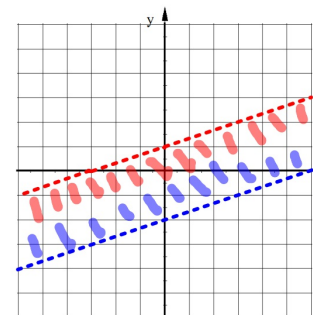## Graph this system of inequalities.

$2x - 6y > -6$

x-int = -3
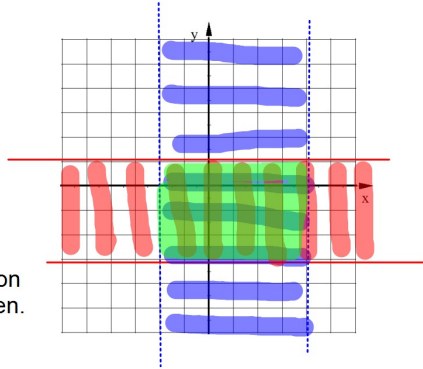y-int = 1

$-4x + 12y > -24$

x-int = 6
y-int = -2

The solution region is the area between the lines.

Graph this system of inequalities.

Between

-2 < x < 4   Vertical

-3 ≤ y ≤ 1   Horizontal

Between

The solution region
is shaded in Green.

Graph this system of inequalities.

$y < -2|x + 1| + 4$

$y \geq 2|x| - 3$

The solution region
is shaded in Green.