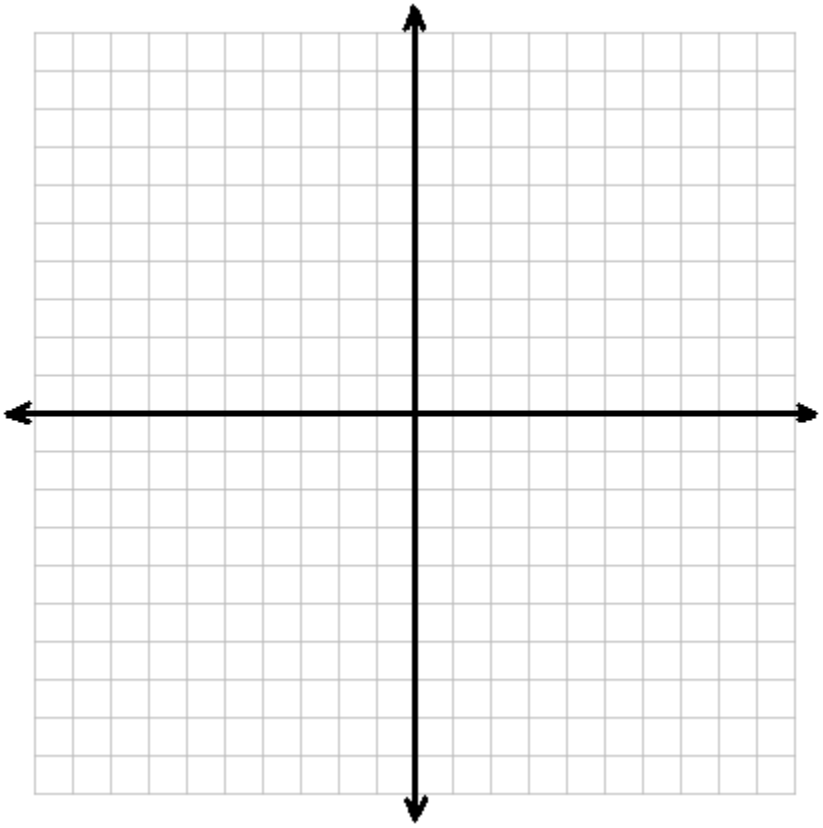
1) *(3 points)* Determine if (2, -1) is a solution to the following system? Show work to support your answer.

$$x + y \geq -2$$
$$-5x + y < -3$$

2) *(8 points)* Graph the below system of linear inequality.
Identify the solution of the linear inequality.
(3 points) Graph the first equation
(3points) Graph the second equation
(2 points) Identify the solution of the system

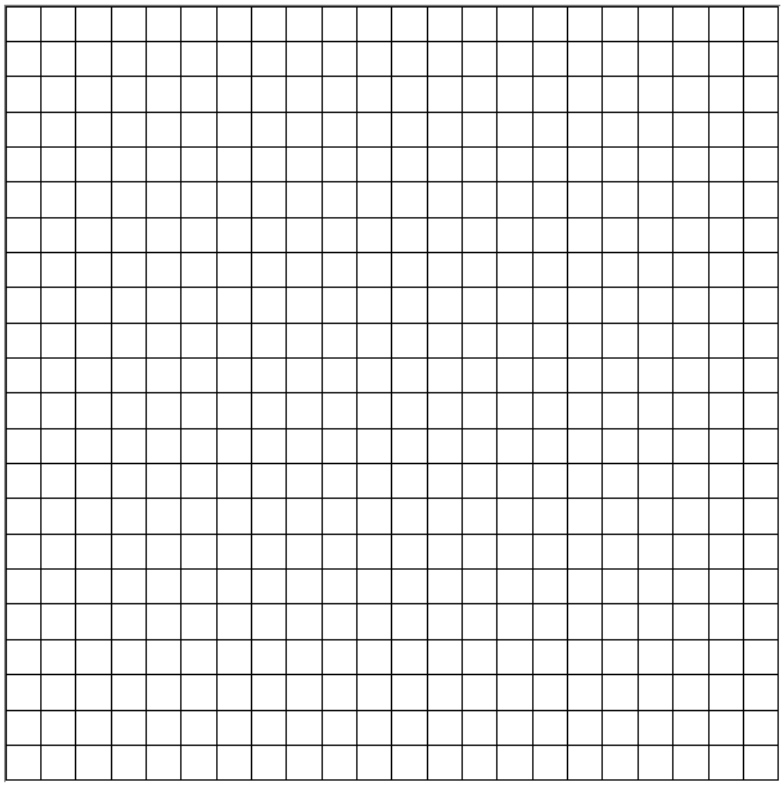
$$y < -\frac{2}{3}x - 5$$
$$y \geq -\frac{2}{3}x + 2$$



3) *(8 points total)* You receive a gift certificate for $25 to your local movie theater. Matinees are $4.50 each and evening shows are $7.50 each.

a) *(2 points)*Write an inequality that represents the number of matinees and evening shows you can attended.

b) *(3 points)* Graph the inequality and identify the solutions

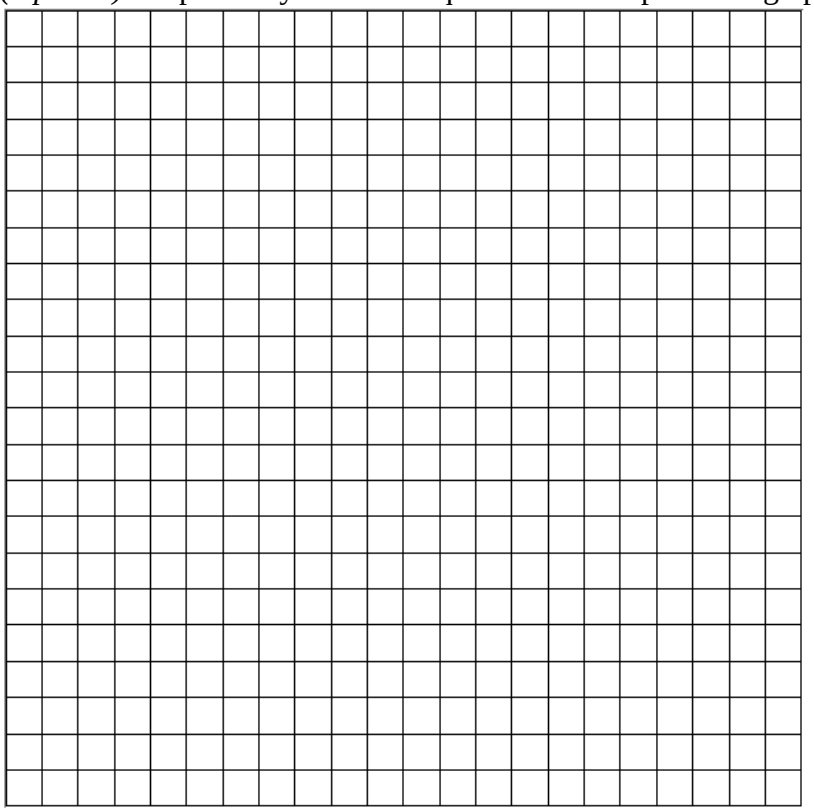


c) *(3 point)*Identify 3 possible combinations of matinees and evening shows that you can attend.

4) *(11 points total)* Each day an average moose needs a total of 1.9 grams of sodium and 11,000 Calories of energy to survive. The moose has two types of vegetation that it can eat. Aquatic vegetation has about .15 grams of sodium and 193 Calories of energy per kilogram. Terrestrial vegetation (twigs and leaves) give no sodium however has 965 Calories of energy per kilogram.

a) *(4 points)* Write a set of linear inequalities describing the amount of Aquatic and Terrestrial vegetation the moose needs to eat on a daily basis

b) *(4 points)* Graph the system of inequalities on the provided graph



c) *(3 points)* If the moose can only eat a total of 32 kilograms of food daily give 3 different ways the moose could survive