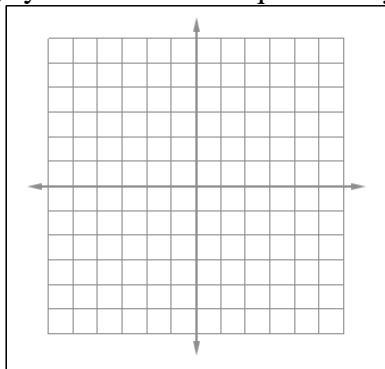


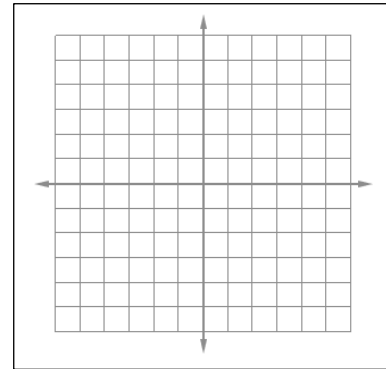
Part A: Solving Systems of Linear Equations [A-REI.C.6]

Solve the following systems of linear equations by graphing.

1.
$$\begin{cases} y = -\frac{1}{3}x - 3 \\ 2x + y = 2 \end{cases}$$



2.
$$\begin{cases} y = \frac{1}{2}x - 1 \\ x - 2y = 4 \end{cases}$$



3. **Solve** each system of linear equations *algebraically* using the best method.

a)
$$\begin{cases} -5x + y = -3 \\ 3x - 8y = 24 \end{cases}$$

b)
$$\begin{cases} y = 2x - 3 \\ 3x - 2y = 7 \end{cases}$$

4. Mrs. Johnson needs a babysitter to take care of her 5-year-old son for Saturday night. Babysitter A charges \$20 upfront and \$6 per hour. Babysitter B charges \$15 upfront and \$7 per hour.

A) **Write** two equations to describe the amount each babysitter will charge with respect to hours worked.

$f(x) =$

$g(x) =$

B) **Complete** the table for the domain $\{1 \leq x \leq 5\}$.

x	$f(x)$	$g(x)$

C) **Find** the number of hours that would result in the babysitters charging the same amount.

D) **Confirm** your answer to C, *algebraically*.

E) **Explain** which magician would you hire if the birthday party is to last *six hours*, **justifying** your choice.

5. For each of the points given, **determine** if the point is a solution to the system of linear inequalities.

$$\begin{cases} \frac{1}{2}x - y > 4 \\ y \leq 2x + 2 \end{cases}$$

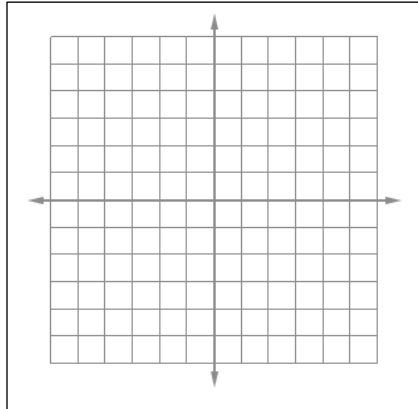
A) (-1, 2)

B) (8, 0)

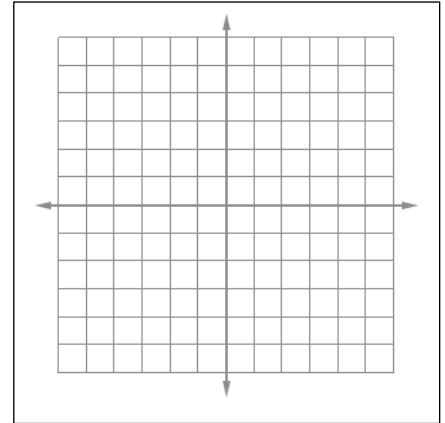
C) (0, -12)

Graph the system of linear inequalities. **Shade** appropriately.

6.
$$\begin{cases} y > x - 2 \\ y \leq -\frac{2}{3}x + 3 \end{cases}$$



7.
$$\begin{cases} y > 2x - 4 \\ x + 2y \leq +2 \end{cases}$$



8. Matt and Natalie each improved their yards by planting rose bushes and shrubs. They bought their supplies from the same store. Matt spent \$83 on 14 rose bushes and 11 shrubs. Natalie spent \$64 on 7 rose bushes and 10 shrubs.

A. Write a system to represent the situation.

B. Solve the system.

C. What is the price for 100 rose bushes?

9. When solving a system of linear equations, what are the 3 possible cases that can occur?

10. Use your answer to question #9 to **explain** How to interpret the solution to a system of equations *graphically*?