Algebra I

Lesson 6.1 – Solving Systems by Graphing

Mrs. Snow, Instructor

_____Name

Mario wants to rent a bike at a state park. There are 2 parks he is considering. Blue Hills State Park has an entrance fee of $8 and charges $2 per hour for bike rental. Silver Spring State Oark has an entrance fee of $2 and charges $5 per hour for rental. Well, which park is cheaper? Depends on the number of hours Mario rents the bike. How many hours rental are we looking at for the same cost? We see here that different parks charge different rates!

Woooo! Hear that word, "rates?" That means dollars per mile and that means slope!

Vocabulary

System of linear equations – a set of 2 or more linear equations containing 2 or more variables

Solution of a system of linear equations – is an ordered pair that satisfies each equation in the system. The ordered pair will make all the equations true.

Consistent – systems that have _____

Inconsistent – systems that have _____

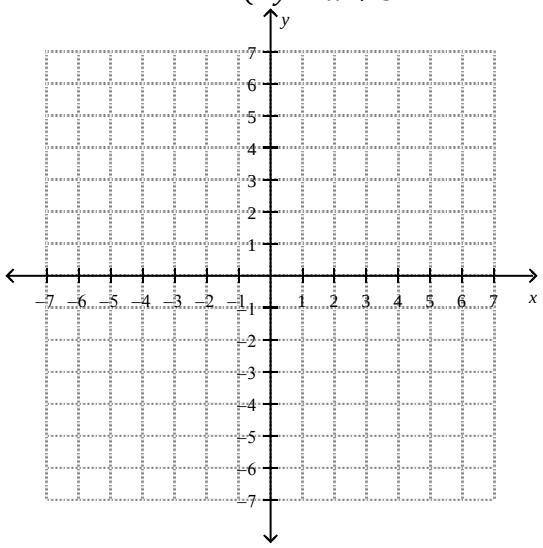
Well, how do we find this ordered pair that is a solution to both equations? *(Hint: What is the name of this section?)*

- When given a system of equations and an ordered pair, plug in the ordered pair into both equations and see if it is a legitimate solution for each equation. You will want to get the equations into slope-intercept form.
- Each equation may be graphed. The solution to the system of equations will be the point of intersection. The actual solution then will be the x-y ordered pair that corresponds to the intersection.

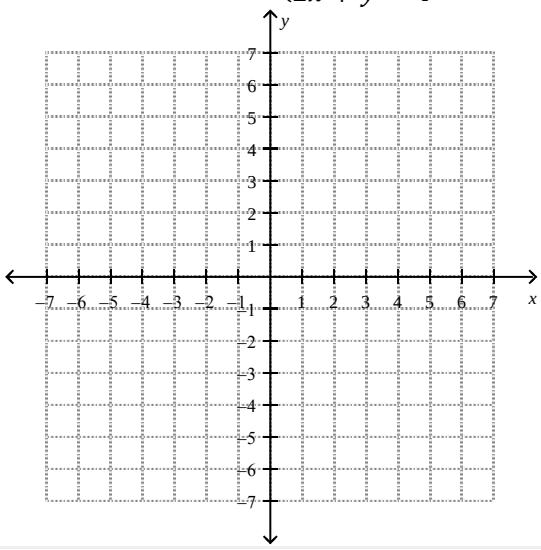
Tell whether the ordered pair is a solution to the system of equations. $(1,3); \begin{cases} 2x+5=5 \\ -2x+y=1 \end{cases}$	$(2,1); \begin{cases} x-2y=4 \\ 3x+y=6 \end{cases}$

Solve the system of equations by graphing.

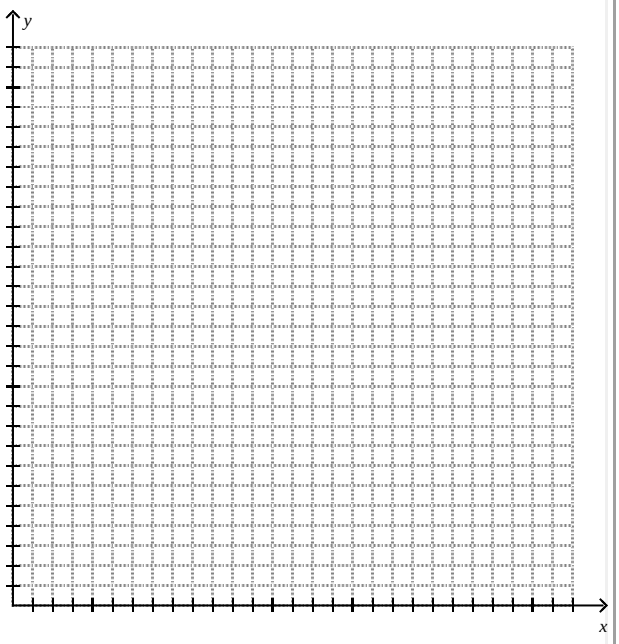
$$\begin{cases} y = -2x - 1 \\ y = x + 5 \end{cases}$$



$$y = \begin{cases} \frac{1}{3}x - 3 \\ 2x + y = 4 \end{cases}$$



Mary and Carlos are each saving for new scooters. So far, Mary has $9 saved and can earn $6 per hour babysitting. Carlos has saved $3, and can earn $9 per hour working at his family's restaurant. After how many hours of work will Mary and Carlos saved the same amount? What will that amount be?



Video club **A** charges $10 for membership and $3 per movie rental. Video club **B** charges $15 for membership and $2 per movie rental. For how many movie rentals will the cost be the same for both clubs? What is the cost? Explain what the graph means.