Algebra I
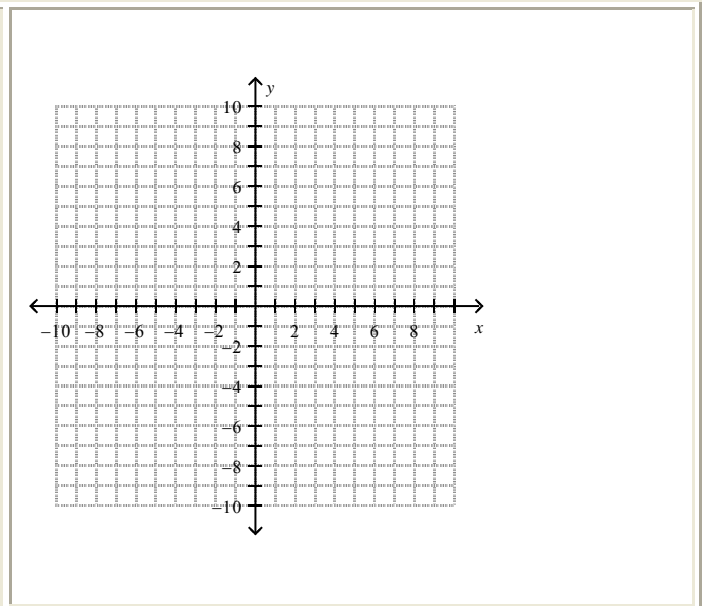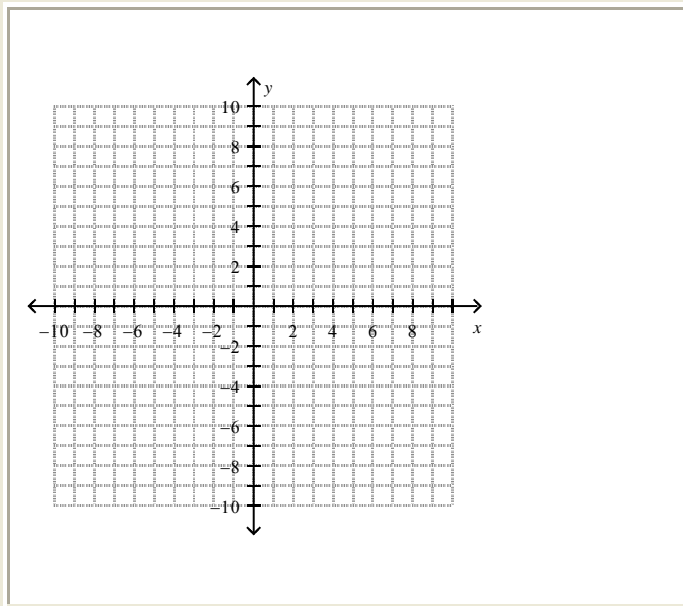## Lesson 6.4 – Solving Special Systems
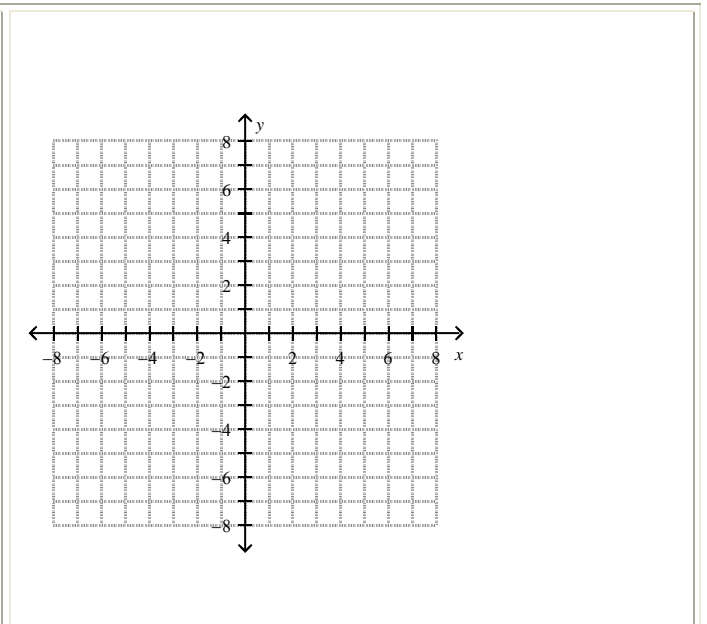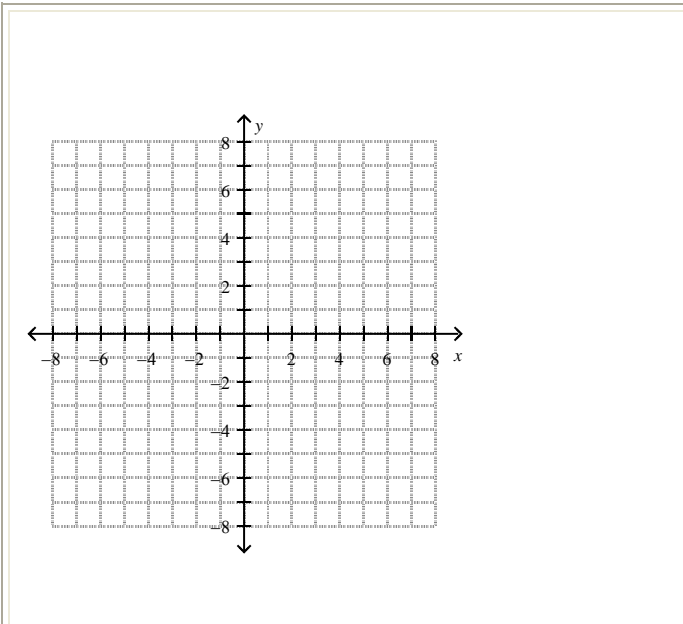### Mrs. Snow, Instructor

_____Name

For review solve by graphing the following system of equations:

OK, Really? What are the solutions to these guys???? Well where will parallel lines intersect?   If the lines graph as the same, what is the "intersection?"

Solve the systems by graphing.

When we get an answer where the variables cancel out and the equation yields a **false statement** like   , we have parallel lines or an inconsistent system of equations.

When the variables cancel out and the equation yields a **true statement** like   we have the same lines or a consistent and dependent system of equations.

Vocabulary

Consistent – Free from variation or change, steady regular.: A system of equations with *at least one solution*.

Dependent system – a system of equations that has <u>infinitely many solutions</u>. If graphed, the 2 equations will graph as the same line *(Slopes and y-intercepts are the same).* When solving algebraically, the variables will cancel out and you will have a **true statement**. Since there is at least one solution, this system is also **consistent.**

Independent – a system of equations that have only one unique solution. When graphed, you will see 2 distinct lines intersecting at one point. Since one solution is "at least" one solution, this system is also **consistent.**

Inconsistent – Incompatible, incoherent or illogical in thought or action, does not satisfy the same set of values.: AKA *Parallel lines*; systems that have <u>no solutions</u>. The graph will be of 2 parallel lines (*Parallel lines will have the same slope with different y-intercepts!*) *W*hen solved algebraically the variables will cancel out and you will be left with a **false statement**.

Classify the systems and give the number of solutions *(write both equations in slope intercept form and compare the slopes and intercepts.)*