

# System of Equations

## DAY 1

### Warm-up:

Students will practice graphing equations using graph paper. They will graph two equations which are shown on the overhead.

### Mini-lesson:

Students are shown two equations where the solution is the intersection. The question is asked “What do you notice about the two lines?” Students make the connection between the solution of the two equations and where the line intersects. Students then watch the teacher model a problem with graph paper to find the point of intersection.

### Student work:

Students are given two equations to solve and graph. They must identify the point of intersection and explain that this is the solution to the problem.

### Closing:

Students will answer the following question in their math journals. “What resource available in class would be useful to graph equations?”

## DAY 2

### Warm-up:

Students will practice graphing a set of equations on graph paper and will find the point of intersection.

### Mini-lesson:

The teacher will begin class with a discussion involving the journal question from day 1, “What resource available in class would be useful to graph equations?” The class will determine that a calculator will be the most convenient choice to solve equations. The teacher will read the problem and show the problem on the Smartboard;

*A plane with a tailwind flew 1920 mi in 8 hours. On the return trip, against the wind, the plane flew the same distance in 12 hours. What is the speed of the plane in calm air and the speed of the tailwind?*

The Interactive Physics model will be shown following the reading of the problem to add a visual to the word problem.

Geometer Sketch Pad and Stella models will be used to explain the math portion of the word problem.

Students will be shown how to solve the problem using Smartview on a Smartboard. Students may follow along on their TI calculators while the teacher models the problem.

### Student work:

Students will be given five sets of equations to solve on their TI calculators. The teacher will walk around during this work time to answer questions.

### Closing:

Students will discuss a comparison of the different models used to introduce the “plane word problem” in their math journals.

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You should submit this form in addition to any computer generated files/documents/models to your group folder on Angel. Please create a .zip file and upload the group of files as a single archive.

Name: <b>TEAM E</b>
Grade level(s)/Subject taught: <b>Math A</b>
Objectives:  <b>*Students will be able to translate word problems into algebraic equations.</b>  <b>*Students will be able to solve systems of equations graphically.</b>

## Mathematical Concept

### Standard 3 - Mathematics

Key Idea:

Symbolic Representation is Used to Communicate Mathematically

- Students should be able to solve systems of equations graphically.
- Relate Mathematics to Immediate Environment

Materials:

- 1) Laptop with Interactive Physics, Geometer Sketchpad and Stella programs.
- 2) LCD Projector
- 3) Class set of graphing calculators