

Algebra 1B Live Lesson

U4L8: Systems of Linear and Quadratic Equations
(Chapter 9-8 in textbook)



Agenda



1. Review selected problems and topics from U4L8 – Systems of Linear and Quadratic Equations.

2. Use the 2-column note system to take better notes in math class. Bring your math notebook and pen or pencil to each math LiveLesson class.

2-Column Notes Template



1. Announcements/To Do's
2. School-Wide Learner Outcomes
3. LL Objectives
4. Vocabulary words
5. Problems
6. Summary (End of class)

1. Write down important details.
2. What are you going to work on this week?
3. Write down the main idea of the lesson.
4. Definitions (fill in as we go)
5. Steps to solving problems
6. 1 or 2 sentences about the LL class.

Reminders and To – Do's



Information

1. Complete 1 math lesson per day.
2. Check your WebMail every day
3. Be prepared to spend 4 - 6 hours per day on schoolwork.
4. Remind your Learning Coach to take daily attendance

What to do

1. Go to your Planner in Connexus to find the math lesson for the day
2. Go to Connexus to find WebMail
3. Complete lessons for the day from your Planner. Do not get behind on lessons.
4. Have your Learning Coach log into Connexus daily.

Reminders and To – Do's



Information

5. Go to the Message Board first for information about our math class.

6. Contact Mr. Elizondo for math questions.

Remember: You need at least 2 phone calls with Mr. Elizondo per semester.

What to do

6. Call (559) 549 - 3244 and leave a voicemail if call is not answered.

Make an appointment at:
<https://elizondo.youcanbook.me>

Send a WebMail

U4L8 – California Common Core State Standards



- HSA-REI.C.7: Solve a simple system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically. For example, find the points of intersection between the line $y = -3x$ and the circle $x^2 + y^2 = 3$.

U4L8 - Objectives



- Solve systems of linear and quadratic equations.

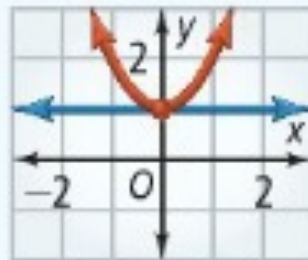
U4L8 - Introduction



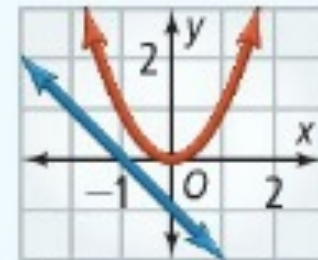
- You can solve systems of linear and quadratic equations graphically and algebraically. This type of system can have two solutions, one solution, or no solutions.



Two solutions



One solution



No solutions

U4L8 - Solving by Graphing



What are the solutions of the system? Solve by graphing.

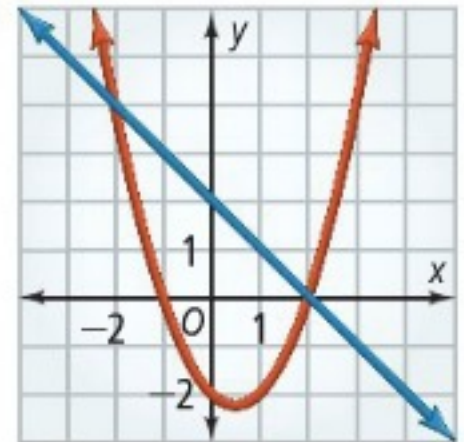
$$y = x^2 - x - 2$$

$$y = -x + 2$$

Step 1 Graph both equations in the same coordinate plane.

Step 2 Identify the point(s) of intersection, if any. The points of intersection are $(-2, 4)$ and $(2, 0)$.

The solutions of the system are $(-2, 4)$ and $(2, 0)$.



U4L8 - Using substitution



What are the solutions of the system? $y = x^2 - 6x + 10$
 $y = 4 - x$

$$x^2 - 6x + 10 = 4 - x$$

1.) Write a single equation containing only 1 variable.

$$x^2 - 6x + x + 10 - 4 = 0$$

$$x^2 - 5x + 6 = 0$$

2.) Factor and solve for x.

$$(x - 3)(x - 2) = 0$$

$$x - 3 = 0 \quad \text{or} \quad x - 2 = 0$$

$$x = 3 \quad \text{or} \quad x = 2$$

U4L8 - Using substitution



What are the solutions of the system? $y = x^2 - 6x + 10$
 $y = 4 - x$

$$x = 3 \quad \text{or} \quad x = 2$$

$$y = 4 - 3 \quad \quad \quad y = 4 - 2$$

$$y = 1 \quad \quad \quad y = 2$$

$$(3,1) \quad \quad \text{or} \quad (2,2)$$

3. Find corresponding y-values. Use either equation.

The solutions of the system are (2,2) and (3,1).

U4L8 - Using Elimination



$$y = 20x + 124$$

$$y = -x^2 + 39x + 64$$

- Step 1: Eliminate y .

$$\begin{array}{r} y = -x^2 + 39x + 64 \\ -(y = \quad 20x + 124) \\ \hline \end{array}$$

$$0 = -x^2 + 19x - 60$$

- Step 2: Factor and solve for x .

$$0 = -x^2 + 19x - 60$$

$$0 = -(x^2 - 19x + 60)$$

$$0 = -(x - 4)(x - 15)$$

$$x - 4 = 0 \quad \text{or} \quad x - 15 = 0$$

$$x = 4 \quad \text{or} \quad x = 15$$

U4L8 - Using Elimination



$$y = 20x + 124$$

$$y = -x^2 + 39x + 64$$

- Step 3: Find the corresponding y-values. Use either equation.

$$y = 20(4) + 124$$

$$y = 20(15) + 124$$

$$y = 80 + 124$$

$$y = 300 + 124$$

$$y = 204$$

$$y = 424$$

$$(4, 204)$$

$$(15, 424)$$

Questions?



- Check the Message Board first
- Send a WebMail
- You can also make an appointment at <https://elizondo.youcanbook.me>
- You can also call me at (559) 549-3244. If I'm not available to answer your call, please leave a voicemail with your full name and phone number.