

Algebra 1B Live Lesson

U4L4: Factoring to Solve Quadratic Equations
(Chapter 9-4 in textbook)



Agenda



1. Review selected problems and topics from U4L4 – Factoring to Solve 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 your own questions.
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

U4L4 – California Common Core State Standards



- HSA-REI.B.4: Solve quadratic equations in one variable.
- HSF-IF.C.8: Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.

U4L4 - Objectives



- Solve quadratic equations by factoring
- Just like in U4L3, we are trying to find where our parabola meets the x-axis. We are using factoring to find the roots of the equation or the zeros of the function.

U4L4 - Vocabulary



- Zero-Product Property

U4L4 - Introduction



- To solve quadratic equations using factoring, we first have to know the zero-product property

take note

Property Zero-Product Property

For any real numbers a and b , if $ab = 0$, then $a = 0$ or $b = 0$.

Example If $(x + 3)(x + 2) = 0$, then $x + 3 = 0$ or $x + 2 = 0$.

U4L4 – Using the Zero-Product Property



What are the solutions of $(4t + 1)(t - 2) = 0$

$$(4t + 1)(t - 2) = 0$$

$$4t + 1 = 0 \quad \text{or} \quad t - 2 = 0$$

$$4t = -1$$

$$t = \frac{-1}{4} \quad \text{or} \quad t = 2$$

U4L4 – Using the Zero-Product Property



What are the solutions of $(2y + 1)(y + 14) = 0$

$$(2y + 1)(y + 14) = 0$$

$$2y + 1 = 0 \quad \text{or} \quad y + 14 = 0$$

$$2y = -1$$

$$y = \frac{-1}{2} \quad \text{or} \quad y = -14$$

U4L4 – Solving by Factoring



You can solve quadratic equations by factoring.

Steps to solve an equation by factoring:

1) Use inverse operations to write the equation in standard form:

$$ax^2 + bx + c = 0$$

2) Factor the quadratic expression.

3) Use the Zero-Product Property.

U4L4 – Solving by Factoring



What are the solutions of $x^2 + 8x + 15 = 0$

$$x^2 + 8x + 15 = 0$$

$$(x + 5)(x + 3) = 0$$

$$x + 5 = 0$$

$$x = -5$$

$$x + 3 = 0$$

$$x = -3$$

U4L4 – Solving by Factoring



What are the solutions of $2a^2 - 15a + 18 = 0$

$$2a^2 - 15a + 18 = 0$$

$$(2a - 3)(a - 6) = 0$$

$$2a - 3 = 0 \qquad a - 6 = 0$$

$$2a = 3$$

$$a = \frac{3}{2}$$

$$a = 6$$

U4L4 – Solving by Factoring



What are the solutions of $x^2 + 14x = -49$

$$x^2 + 14x = -49$$

$$x^2 + 14x + 49 = 0$$

$$(x + 7)^2 = 0$$

$$x + 7 = 0$$

$$x = -7$$

U4L4 – Solving by Factoring



Solve the equation: $(2x - 7)(4x + 10) = 0$

$$(2x - 7)(4x + 10) = 0$$

$$2x - 7 = 0 \quad 4x + 10 = 0$$

$$2x = 7 \quad 4x = -10$$

$$x = \frac{7}{2}$$

$$x = \frac{-10}{4} \text{ or } -\frac{5}{2}$$

U4L4 – Solving by Factoring



Solve by factoring: $3b^2 + 7b - 6 = 0$

$$3b^2 + 7b - 6 = 0$$

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

$$3b - 2 = 0 \quad b + 3 = 0$$

$$3b = 2$$

$$b = \frac{2}{3}$$

$$b = -3$$

U4L4 – Solving by Factoring



Solve by factoring: $z^2 - 10z + 24 = 0$

$$z^2 - 10z + 24 = 0$$

$$(z - 6)(z - 4) = 0$$

$$z - 6 = 0$$

$$z - 4 = 0$$

$$z = 6$$

$$z = 4$$

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.