**UNIT 1 VIDEO PROJECT – DERIVING THE QUADRATIC FORMULA**

**Learning Objective 1**: To use the processes you have learned for solving quadratic equations to derive the quadratic formula from an equation in standard form

**Learning Objective 2**: To develop “professional” work habits/skills including:

* Meeting due dates during various stages of the project
* Following directions
* Proactively conducting research
* Interacting with your “supervisor” (me) in a professional and timely manner

**Background**: In Algebra 2 you learned that quadratic equations could be solved a variety of ways…

* By factoring
* By using the square root property
* By completing the square
* By using the quadratic formula

Of the ways listed above the only one that works under ALL circumstances is the quadratic formula. The reason for this is because the quadratic formula is simply “different way” of writing an equation in standard form: ax2 + bx + c = 0

**The Project**: In this project, you will create a learning video, similar to the ones you have used as part of this class (Virtual Nerd, Kahn academy etc.). In this video, **you will demonstrate the process of deriving the quadratic formula from an equation in the standard form ax2 + bx + c = 0**. Pretend that your “audience” is a student who has never seen this problem solved before. Here is a snapshot of what the process will entail:

* What will the problem look like before I start?
  + An equation in standard form ax2 + bx + c = 0
* What am I doing to this equation?
  + Solving for x
* What does the process of solving for x entail?
  + Completing the square
  + Using the square root property
  + Using the other “rules” for solving equations that you have learned
* What will my answer look like when I am done solving?



**Resources**: You are free to use whatever resources you like to complete this assignment.

* I encourage you to watch other learning videos in which teachers/students complete this exact same problem (I will provide you with a few). In essence, you can “replicate” their videos and use the way they solve the problem as a model. In order to replicate the process and communicate it properly to your audience, you will need to understand it.
* I encourage you to collaborate with your classmates. I encourage you to “rehearse” your videos before “shooting” them for real.
* If you wish to discuss the process with me to make sure you understand it, please make an appointment with me before the due date listed below.

**Rules for the Video**:

* Your video must have BOTH a visual and audio component. Your “face” only needs to be in the video at the beginning and end so that I know that it is you doing the problem.
  + The video component must include your demonstration of the process deriving the quadratic formula. It can be as simple as putting the camera above your hands doing the work on pencil and paper, or doing the problem on a white/chalk board. You should do your best to minimize any “cross-outs” (in other words, it may take more than one “take” to make it “professional”)
  + The audio component must provide a verbal description of the process each step of the way. You should do your best to speak as clearly and succinctly as possible. Remember, the “audience” is other students. The voice describing the process MUST be your voice.
* The video must be no longer than 10 minutes
* Each individual student must submit a video. While you can collaborate and help each other all you want, each student will receive an individual grade
* You may add special effects (audio and/or visual) to help enhance the production of your video, but it is not required. If you add effects that enhance the quality of your presentation, you can receive extra credit (see rubric)

**Important Due Dates**

* The due date for your final project is **Tuesday 7:20 am, October 1 (all classes regardless of A/B day).** You must submit your project by 7:20 am on this date to receive full credit for meeting the due date (see rubric attached)
  + The last date that I will accept the project is **Friday October 4 2pm**
  + If you submit the project on 10/1 **and** have notified (e-mailed) me by Friday 9/20 that you need an extension past 10/1, you will receive half credit (2 of 4) for meeting the deadline.
  + If you do not notify me by Friday 10/19, I will still accept your video on 11/1 but you will receive a 0 out of 4 for meeting the deadline as part of your project grade.
* I will NOT be using any class time to discuss or help anyone with this project. I will be willing to meet with you during FLEX, by appointment on your time either before/after school up until Thursday September 26th. I will meet with you ONLY if you have specific questions about solving the problem (meaning, you have done your own research and/or collaborated with classmates first before reaching out to me)

**How will you be graded?** The attached rubric provides you with details of each element of grading. The project will be scored in a manner in which you can still pass even if you are not in complete understanding of the derivation of the quadratic formula:

* Approximately one third of your grade will be your understanding of how to derive the quadratic formula from an equation in standard form
* Approximately one third of your grade will be the quality of your audio/visual presentations in your video
* Approximately one third of your grade will be based on “professionalism” such as following directions, meeting due dates and communication with me

**How should you submit your project**? There are 3 preferred formats that are acceptable:

1. Post on you tube and email me the link, give me permission to view it. **This is historically the most successful way.**
2. Share with me via Google docs. Please make sure I have permission to view it.
3. Email it to me with the video as an attachment. I you use this method, I would suggest not using the “fullest” resolution so as to not take up too much file memory.

If none of these formats work for you, please see/email me as soon as possible so we can make another arrangement.

I hope that you get into making the videos and think this is a fun project.  There are hundreds of jobs in which you may have to explain/teach something to a colleague over a "video conference" so I am trying to simulate that experience here for you.

If there is any aspect of this project that concerns you or that you don’t understand, please email/see me as soon as possible. I will not share your video with ANYONE without your specific permission (Pinky swear!)