

Name _____

Date _____

Advanced Algebra

Learning Targets

Focused Instruction: Unit 4 Quadratics

Learning Targets: This is an organized list of learning targets to help you prepare for the Unit Test. Please rank each topic using the provided scale.

If you are a low rank on a topic you should: look in your notes, do some research on the topic, look in your green book in CHAPTER 4 page 193-199, and Chapter 7 Page 361-398, ask a friend who has a higher rank on that topic than you, as a question to the teacher.

Term	Where can I look up extra support on this learning target	I could teach this topic to others	I can do this topic on my own	I can do this topic with some help	I do not understand this topic at all
I know the three quadratic forms: General Form Vertex Form Factored Form	Page 371				
I can easily move between the forms of a quadratic given information about 1 of the forms	Week #1 Homework and Week number 2 homework				
I can factor with a coefficient of 1	See Extra Support Material				
I can factor with a coefficient of more than 1	See Extra Support Material				
I can use zero product property	See Extra Support Material				
I can use finite difference to find the degree and equation of a polynomial	This is just subtracting. Look at page 361				

I can multiply two binomials using the box or foil	See Extra Support Materials				
I can find the zeros of a quadratic	This can be done by using the quadratic formula or using the zero product property after you factor the problem.				
I can find the vertex of a quadratic	This is a very big essential concept for the entire unit! The process is to <ol style="list-style-type: none"> 1) Find the roots 2) Add the roots 3) Divide the sum by 2 4) Do VARS of that value to find the corresponding y value of the vertex 				
I can write a quadratic in Vertex form	This is a very important concept that comes from out work in Unit 2. We first learned $Y=a(x-h)+k$ We should already know that h is a horizontal shift and k is a vertical shift. So you can write the vertex from by just finding the vertex and putting the numbers where they go into this essential concept from unit 2: $Y=a(x-h)+k$				
I can complete the square as a way to write a quadratic into Vertex form	Page 377				
I can use the quadratic formula	Page 385 or see the extra support material posted				
I know what the Discriminant is and what it tell me.	The discriminant is given by the formula The following three things could happen: <ol style="list-style-type: none"> 1) If $b^2-4ac < 0$, then there are 2 conjugate pairs imaginary roots 				

	<p>2) If $b^2-4ac= 0$, then there is 1 real root called a double root</p> <p>3) If $b^2-4ac>0$, there are two different real roots</p>				
I am aware than there is a number set that deals with complex numbers	<p>Page 391: Note: IN this class we only deal with an introduction to this topic. It will be continued in other classes. You need to know that $i^2=-1$ Your answers to an imaginary root will always be in the form $a+bi$ and $a-bi$</p>				
I know what a conjugate pair is	<p>Page 391 $a+bi$ and $a-bi$</p> <p>Work the example $y=x^2-8x+22$ With the quadratic formula and you will get 2 numbers in this form</p>				
I can maximize the area of a fence given a fixed perimeter. I understand that this graph will be a parabola!	<p>Very important application; You should be able to do this with both a 4 sided fence and a three sided fence that uses an existing wall as one side.</p>				
I can maximize the volume of a box	<p>We did this in Unit 2! It comes up again in Unit 4 and 5 You should be mastering this</p>				
I can write the equation of a parabola given the roots and a point					
I can write the equation of a parabola given the axis of symmetry, one root and a point					