Lesson 12.4 – Big Ideas	Your Notes
• Zero Product Property • Solutions/roots/zeros/x-intercepts	<u>Factoring Trinomials – The Box Method</u> The box method only works if you have factored out any common factors first! 1. Multiply the first and last terms. 2. Find the factors that multiply to be the product (in step 1) and that add to be the middle term (organize this information with an X-box) 3. Draw a 2×2 square 4. Put the first term of the trinomial in the upper-left corner and the constant term in the lower-right corner. 5. Put the factors (from step 2) in the two remaining squares. 6. Find the GCF of each row & each column 7. Write the result as a product of two binomials.
Lesson 12.6 – Big Ideas • Perfect Squares • Approximating square roots • Simplifying square roots • Extracting square roots to solve a quadratic equation (AKA the Square Root Property)	**Your Notes**

Lesson 12.7 – Big Ideas	**Your Notes**

• Completing the square (to solve a quadratic equation)
 	
 • Axis of symmetry
 	
 • Vertex
	Completing the Square:
	 1. If necessary, factor out the coefficient of the quadratic term from the first two terms.
	 2. Complete the Square:
	     i. Half the middle: b
	     ii. Write it down
	     iii. Square it = c
	     iv. Multiply: $a \times c$
	     v. Combine constants
	 3. Solve via the Square Root Property.
	
	 $$x^2 + 6x + \left(\frac{6}{2}\right)^2 + 7 - \left(\frac{6}{2}\right)^2$$ $$\left(x + \frac{6}{2}\right)^2 + 7 - 9 = (x+3)^2 - 2$$

Lesson 13.1 – Big Ideas	**Your Notes**
• Quadratic Formula • Discriminant • Roots vs. zeros	