

**Algebra II - Chapter 4 (Common Core – Unit 2)**

| <b>Day</b> | <b>Topics</b>   | <b>Objectives: Students will be able to...</b>  | <b>Homework</b>  |
|------------|---|---|--|
| 1          | Section 4.1 Graph Quadratic Functions in Standard Form        | Identify the vertex, axis of symmetry, and other characteristics of quadratic functions including max/min, incr/decr, and intercepts. | Textbook Worksheet 4.1<br>Copy Key Concept p.236,237,238   |
| 2          | Section 4.1 continued   |   | p. 240 #1-3,7,11,14,15,17,19,21,24, 33,36,39,40,44-46  |
| 3          | 4.2 Graph Quadratic Functions in Vertex or Intercept Form     | Graph functions given in vertex or intercept form.  | Copy key concept p.245,p. 246 & p.248<br>p. 249 #1,2,3,6,9,12,16,19,22,23, 24,27,30,33,36,43,46,51 |
| 4          | 4.1 Technology – find Maximum and Minimum Values              | Use a graphing calculator to find max and min values of a quadratic function.   | p. 244 TI-84 Find max & min do #1-6<br>Study for quiz.   |
| 5          | Quiz 4.1& 4.2   |   | Copy key concept p. 253  |
| 6          | 4.3 Solve $x^2 + bx + c = 0$ by factoring                     | Solve quadratic functions by factoring and applying the zero product property.  | p.255 #1,2,3,6,9,12,15,18,21,24,27,33,39,40-42,44,47,50,56,61,65                                   |
| 7          | 4.4 Solve $ax^2 + bx + c = 0$ by factoring                    |   | Hw p. 263<br>#1,2,3,6,9,12,13,16,19,22,25,28,31,32,35,38,41,44,47,50                               |
| 8          | Section 4.4 continued   | Solve word problems that require quadratic functions.   | p. 264 #62,63,64,67<br>practice quiz sections 4.3-4.4 (p.265 #1-13)                                |
| 9          | Quiz 4.3 & 4.4  |   | Guided practice p. 268 #9-19   |
| 10         | 4.5 Solve Quadratic Equations by Finding Square Roots         | Learn and apply properties of square roots to solve quadratic equations. Model dropped objects with quadratic functions.              | p. 269 #3-4,7-8,11-12,15-16,19,20,22,25,28,31,34,38,39   |
| 11         | Techology – Solve quadratic equations with tables and graphs. | Solve quadratic equations with graphing calculators, by using the table and graph features.   | p. 272-273 #1-10   |
| 12         | Word Problems   | Solve word problems that require skills from 4.1-4.5.   | p. 274 #1,4-6 – word problems  |
| 13         | 4.6 Perform Operations with Complex Numbers                   | Perform operations (add, subtract, multiply, divide) with complex numbers.  | p. 279 #1-3,6,9,12,15,18,21,22,25,28,31,57, **59,65<br>Plot complex numbers #34-37                 |
| 14         | 4.7 Complete the Square                                       | Use the process of completing the square to   | p. 288 #1-3,6,9,12,13,16,19,22,25,28,31,34,35,37,39,41,44, 50,52,62,64                             |

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|           |  | solve quadratic equations.   |  |
| 15        | Quiz review 4.5-4.7  |  | quiz review p. 291 #1-19   |
| 16        | Quiz 4.5-4.7   |  | p.290 #67; p.291 #68 (Word problems)   |
| 17        | 4.8 Use the Quadratic Formula and the Discriminant                       | Remember and apply the quadratic formula. Use the discriminate to determine the number and type of solutions. Solve vertical motion problems.                          | p. 296 #1,2,3,6,9,13,19,22,25,31,34,40,49,50,52-54,55,56,69,71<br><br>Or 4.8 worksheet |
| 18        | 4.9 Graph and Solve Quadratic Inequalities                               | Graph a quadratic inequality. Use a quadratic inequality in a real world context. Solve a system of quadratic inequalities algebraically, graphically or with a table. | p.304 #3-5, 9,12,13,18,19,20,26,35,44,45,46,49,58,72,74                                |
| 19        | Technology - 4.10 Modeling with a Quadratic Function                     | Fit a quadratic function to a set of data.   | p. 308 #1-4  |
| 20        | 4.10 Write Quadratic Functions and Models                                | Write a quadratic function in vertex, intercept or standard form from a given set of points.   | p. 312 #1-5, 6,9,12,15,16,17-21,26,27,28,31,40   |
| 21        | LTF Activity – Graphing Quadratic Functions                              | Benchmark Task – students investigate transformations with quadratic functions.  | LTF  |
| 22        | LTF Another way to look at Factoring                                     | Creates connections between the symbolic method of factoring and the graphical method.   | LTF  |
| 23        | Chapter test review  |  | p. 323 #1-32   |
| 24        | Chapter Test   |  |  |
| Benchmark | Laying the Foundation (LTF) Investigation – Graphing Quadratic Functions | Students will investigate transformations with a quadratic function.   | Laying the Foundation Activity   |
| Advanced  | LTF Activity – Quadratic Optimization                                    | Apply concepts of quadratic functions to find minimum and maximum area for word problems.  | LTF Algebra 2 p. 158   |

Add Carol Hynes Sorts of Polynomial Functions – a great activity which uses cards of polynomial functions where students match the graph to the algebraic equation. This activity is just for quadratic equations. They will match graphs depending on the number of x-intercepts and the value of the vertex or y-intercept.