

**Algebra II Pre-AP/GT**  
**Unit 4 - Quadratics**  
**October 27 to November 14**

<b>Date</b>	<b>Topic</b>	<b>Assignment</b>
Monday 10/27	Factoring (Day 1) GCF, Diff. of Squares and Trinomials	Factoring Worksheet - 1 (1 to 16)
Tuesday 10/28	Factoring (Day 2)	Factoring worksheet - 1 (17 to 29)
Wednesday 10/29	Factoring (Day 3) 4-term, and Sum/Difference of Cubes	Factoring worksheet - 2
Thursday 10/30	4.3 and 4.4 Solve Quadratic Equations by Factoring	Pg. 256: 24-38 even and page 263-4: 32-40 even and 54-58 even
Friday 10/31	4.5 Solving Quadratic Equations by square roots	Pg. 269-270: 3-14 all, 22-33 all
Monday 11/3	Intro to Imaginary Numbers	Pg. 279 (3-11, 12-20 even, 22-27, 51-53)
Tuesday 11/4	4.6 Complex Numbers, Conjugates and Applications	Pg. 280 (28-33 all, 34, 36, 42-48 even, 61-66 all, 65-67 all, 75)
Wednesday 11/5	Complete the Square	Pg. 288 (4-10 even, 22-32 even, 35-38 all, 53-55 all)
Thursday 11/6	Complete the Square continued	continued
Friday 11/7	The Quadratic Formula	Pg. 296 (14-20 even, 40-45 all)
Monday 11/10	The Discriminant	Pg. 296 (31-38 all, 52-63)
Tuesday 11/11	Review - test 2.2	
Wednesday 11/12	<b>Test 2.2 - Complex Numbers, Solving Quadratics</b>	
Thursday 11/13	Three ways of Finding the Vertex of a Parabola	Worksheet
Friday 11/14	4.2 Quadratic Parent	Pg. 249 3-11: graph, state the domain, range, intercepts, vertex and axis of symmetry

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**Factoring Worksheet 1 – Monday 10/27 and Tuesday 10/28 (Do work on your own paper. Show all work.)**

- |                                 |                             |                                  |                        |
|---------------------------------|-----------------------------|----------------------------------|------------------------|
| 1) $2x^2 - 5x - 12$             | 2) $3x^2 - 14x + 15$        | 3) $4x^2 - 7x - 2$               | 4) $5x^2 + 17x + 6$    |
| 5) $6x^2 + x - 2$               | 6) $10x^2 - 3x - 1$         | 7) $6x^2 - 17x - 3$              | 8) $3x^2 - 17x + 10$   |
| 9) $5x^3 - 30x^2 + 45x$         | 10) $x^4 - 3x^2 - 40$       | 11) $6x^3 - 39x^2 - 72x$         | 12) $x^5 - 10x^3 + 9x$ |
| 13) $18x^3 + 39x^2 - 15x$       | 14) $y^{6n} - 5y^{3n} + 6$  | 15) $1 - 64y^6$                  | 16) $x^4y^4 - 16$      |
| 17) $2x^7 - 25x$                | 18) $15x^{2n} - 7x^n - 2$   | 19) $x + 3x^{\frac{1}{2}} - 4$   | 20) $1 - y^8$          |
| 21) $6x + 5x^{\frac{1}{2}} - 4$ | 22) $3x^5 - 3x^3 - 36x$     | 23) $16x^{6n} - 1$               | 24) $16x^{8n} - 1$     |
| 25) $6x^3 + 13x^2 - 5x$         | 26) $x^2 - 6$               | 27) $x^2(a+b) + 2x(a+b) + (a+b)$ |                        |
| 28) $(x+y)^2 + 2(x+y) + 1$      | 29) $3(a+b)^2 - 8(a+b) + 5$ |                                  |                        |

**Factoring Worksheet 2 – Wednesday 10/29. (Do work on your own paper. Show all work.)**

- |                            |                              |                              |                             |
|----------------------------|------------------------------|------------------------------|-----------------------------|
| 1) $x^3 + 1$               | 2) $8x^3 - 125$              | 3) $27x^3 + 64y^3$           | 4) $16x^3 - 2$              |
| 5) $x^3 + 2x^2 - 9x - 18$  | 6) $4x^4 + 2x^3 - 4x^2 - 2x$ | 7) $4x^4 + 2x^3 - 4x^2 - 2x$ | 8) $x^3 + 2x^2 - 9x - 18$   |
| 9) $3x^4 + 81x$            | 10) $x^6 - 1$                | 11) $2x^5 - 2x^3 + 5x^2 - 5$ | 12) $27a^3b^6 + 8m^3n^{12}$ |
| 13) $a^6 - a^4 - 9a^2 + 9$ | 14) $8a^3 - 64$              |                              |                             |

**Mixed Factoring:**

- |                            |                        |   |                  |
|----------------------------|------------------------|---|------------------|
| 15) $2a^5 - 2a^3 - 24a$    | 16) $16a^4b^3 - 81b^3$ | 17) $6m - 19m^{\frac{1}{2}}n^{\frac{1}{2}} + 15n$ | 18) $16m^2 + 25$ |
| 19) $4x^3y - 8x^2y + 10xy$ |                        |   |                  |

**Worksheet for Thursday, 11/13**

**I. Find the roots and the vertex of the following.**

- |                          |                           |                                  |
|--------------------------|---------------------------|----------------------------------|
| 1. $f(x) = 2 + 2(x-4)^2$ | 2. $f(x) = 8x^2 - 16x$    | 3. $y = 10x + 3x^2 + 8$          |
| 4. $y = 6(x-4)(x+6)$     | 5. $f(x) = 4x^2 - 5x - 6$ | 6. $y = 10 - \frac{1}{2}(x+5)^2$ |

**II. Write each problem in the form  $y = a(x-h)^2 + k$ .**

- |                            |                         |                      |
|----------------------------|-------------------------|----------------------|
| 7. $f(x) = 8x^2 - 16x$     | 8. $y = 10x + 3x^2 + 8$ | 9. $y = 6(x-4)(x+6)$ |
| 10. $f(x) = -4x^2 + x + 6$ |                         |                      |

**III. State whether the function has a maximum or minimum value, and then find the value.**

- |                       |                          |                            |
|-----------------------|--------------------------|----------------------------|
| 11. $y = 6(x-4)(x+6)$ | 12. $y = 10x + 3x^2 + 8$ | 13. $f(x) = -4x^2 + x + 6$ |
|-----------------------|--------------------------|----------------------------|