Warm Up: Unit 2 Quadratics Equations and Functions Algebra 2 Kitt

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Period:\_\_\_\_\_

**2.1 Graphing Quadratic Functions in Standard Form**

**Directions**: Given the functions in standard form, find the following: a) Axis of Symmetry, b) vertex c) is the vertex maximum or minimum? d) y-intercept

1. 2.

Axis of Symmetry:­­­\_\_\_\_\_\_\_\_\_\_ Axis of Symmetry: \_\_\_\_\_\_\_\_\_\_

Vertex: \_\_\_\_\_\_\_\_\_\_ Vertex: \_\_\_\_\_\_\_\_\_\_

Max/Min: \_\_\_\_\_\_\_\_\_\_ Max/Min\_\_\_\_\_\_\_\_\_\_

Y-intercept: \_\_\_\_\_\_\_\_\_\_ y-intercept: \_\_\_\_\_\_\_\_\_\_

**2.2 Graphing Quadratic Functions in Vertex Form**

**Directions**: Graph the quadratic functions.

1. 4.

 

**2.3 Factoring Quadratic Equations**

**Directions**: Factor completely.

5. 6. 7.

8. 9. 10.

**2.4 Solve by Factoring**

**Directions**: Solve each equation by factoring.

11. 12. 13.

14. 15.

**2.5 Writing Quadratic Functions from Points.**

**Directions**: Write the equation of a quadratic function in vertex form given the point and vertex.

16.

**2.6 Performing Operations with Complex Numbers**

Directions: Simplify each expression.

17. 18. 19.

**2.7 Completing the Square**

**Directions**: Solve each equation by completing the square.

20.

**Directions**: Rewrite the function from standard form to vertex form by completing the square.

21.

**2.8 The Quadratic Formula and the Discriminant**

**Directions**: Solve the following equations using the Quadratic Formula

22. 23.

**Directions**: Find the value of the discriminant and describe the nature of the roots (real, imaginary, rational, irrational) of each quadratic equation.

24. 25.

**2.9 Solving Systems of Quadratic Equations**

**Directions**: Find the solution(s) to the following system:

26.

**Extension**: **Applications of Quadratic Functions**

27. Jennifer hit a golf ball from the ground and it followed the projectile Golf Ball Trajectory, where ***t*** is the time in seconds, and ***h*** is the height of the ball.   Find the maximum point that her golf ball reached and also when it hits the ground again.

28. Your factory produces lemon-scented widgets. You know that each unit is cheaper, the more you produce. But you also know that costs will eventually go up if you make too many widgets, due to the costs of storage of the overstock. The guy in accounting says that your cost for producing x thousands of units a day can be approximated by the formula C = 0.04x2 – 8.504x + 25302. Find the daily production level that will minimize your costs.