**Algebra 2 Spring 2019 Exam Review**

***Chapter 5: Quadratics***

1. Find the y-intercept, symmetric point, and axis of symmetry of the function; then graph the parabola. 
2. Solve algebraically: 
3. Solve by factoring: 
4. Solve by completing the square:
5. Find the value of the discriminant; then describe the number and type of roots for the equation: 
6. Write the equation of the parabola in vertex form that has vertex (1, -3) and goes through the point (5, 9)
7. Write the equation in vertex form: y = x2 – 8x + 9
8. Write the quadratic function in vertex form: 
9. If 3i is an answer, what else is an answer to the polynomial equation?
10. Factor: x3 + 125
11. Given a polynomial and one of its factors, find the remaining factors of the polynomial. 

**List all the possible rational zeros for the given functions.**

1. 

**Find all the zeros for the given functions.**

1. 

***Chapter6: Radicals***

**Simplify:**

1. 
2. 
3. 
4. 
5. 
6. 
7. 
8. Find for the following functions:  and 
9. Find  and for the following functions: and 
10. Find the inverse of the following function: 
11. What is the domain and range of 

***Chapter 8: Rational Expressions and Equations***

**Simplify each expression.**

1. 
2. 
3. 
4. Find all of the HAs, VAs, and holes for the following function: 
5. Graph the following function:   
   
6. Solve the following equation: 

**Solve the following variation.**

1. If y varies inversely as x and when , find y when 

***Chapter 7: Exponential and Logarithmic Equations***

1. Write in logarithmic form: 
2. Write in exponential form: 
3. Write in logarithmic form: 
4. Write an expression using common logarithms and approximate the value to four places: 

**Solve each equation.**

1. 
2. 
3. 
4. 
5. 
6. 
7. Simplify: 
8. Dione Industries bought a scanner for $800. It is expected to depreciate at a rate of 10% per year. What will the value of the scanner be in 2 years?

***Chapter 11: Sequences and Series***

1. Write an equation for the nth term of the arithmetic sequence: 
2. Find the indicated term for the arithmetic sequence: 
3. Find the sum of the arithmetic series: 
4. Write an equation for the nth term of the geometric sequence: 
5. Find the indicated term of the geometric sequence: 
6. Find .

***Chapter 10: Circles and Ellipses***

1. Find the center and radius: 
2. Find the center and radius: 
3. Find the vertices, co-vertices, foci, major and minor axes: 
4. Write the equation of an ellipse with vertices at  and foci at