**Algebra 4   
2nd Semester Final**

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Block: \_\_\_\_\_\_\_\_\_  
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**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
 Signature**

**Test Sections Score**

**Chapter 4 Quadratics \_\_\_\_\_\_  
  
  
Chapter 5 Polynomials \_\_\_\_\_\_  
  
  
Chapter 11 Probability and Statistics \_\_\_\_\_\_  
  
  
Chapter 7 Logarithms \_\_\_\_\_\_  
  
  
  
1st Semester Final \_\_\_\_\_\_**

**Chapter 4: Quadratics**

Solve the following. [L2]

1.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2.) 2.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4.) 4.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Answer and justify the following [L3]

5.) A basketball player shoots a basketball towards a hoop. The basketball   
follows a parabolic path that can be modeled by the equation  
. If the center of the hoop is located at the   
point (4, 6) does the player make the shot?   
Justify your answer. (Draw a picture if needed). 5.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Solve the following. [L3]

6.) 6.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Solve for x given the following situation. [L4]

7.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Chapter 5: Polynomials**

Solve the following. [L2]

1.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2.) If you were to write the polynomial from problem number one  
in standard form. What would the degree be? 2.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Find all zeros. Identify if any repeat, and/or are imaginary [L3]

5.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Use the given information to answer the following. [L3]

6.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Use the given information to answer the following. Remember [L4]

7.) A rectangular shipping container has a volume of 2500 c.   
The container is 4 times as wide as it is deep, and 5cm taller   
than it is wide. What are the dimensions of the contaner? 7.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Chapter 11: Probability**

Evaluate the following Permutation and Combination. [L2]

1.) 1.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2.) 2.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
  
  
Use the given information to answer the following. [L2]

A bag contains 6 red, 4 green and 5 blue marbles.

3.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
  
  
4.) 4.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_   
  
Is the following scenario mutually exclusive, not mutually exclusive, both or neither? [L2]

5.) 5.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
  
  
Use the given information to answer the following. [L3]

Matt has 5 math books, and Elizabeth has 8 english books.

6.) How many more ways can Elizabeth organize her 6.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
 books on the shelf than Matt can organize his?

Use the given information to answer the following. [L3]

A bag contains 6 red, 4 green and 5 blue marbles.

7.) 7.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Find the following probability. [L4]  
  
8.) 8.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Chapter 11: Statistics**

Use the given data to find the following. [L2]

1. Mean 1.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Median 2.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Mode 3.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. Range 4.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Use the given data (***same as above***) to find the following. [L3]

1. Variance 5.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Standard Deviation 6.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Answer the following. [L4]

7.) On the Normal Distribution Curve for the given data, 7.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
 68% of all the date is between what two numbers?

**Chapter 7: Exponential and Logarithmic Expressions**

Rewrite from log form to exponential or exponential to log form. [L2]

1.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2.) 2.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Evaluate. [L2]

3.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Solve. [L3]

5.) 5.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6.) 6.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Solve the following. Be specific, no between x and y years. [L4]

7.) If you invest $2500 into an account that has 3.2% 7.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
 interest compounded monthly, how long will  
 it take to double your money?

Match the following formulas we used this semester with their name or expression they equal. [L2]

1. Exponential Decay
2. Compound Interest
3. Exponential Growth

J.)