**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 \_\_\_\_\_\_  
  
Chapter -- ACT \_\_\_\_\_\_  
  
Chapter 11 Statistics \_\_\_\_\_\_  
  
Chapter 7 Logarithms \_\_\_\_\_\_  
  
  
2nd 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.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Unit 9: ACT**

Answer the following. [L2]

1. The monthly fees for a company are $370, $310, $380,  
   $340, $310, respectively. What is the mean of the fees?

**a.) $310 b.) $340 c.) $342 d.) $350 e.) $380** 1.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Given,   
   **a.) 0.45 b.) 4.5 c.) 15 d.) 45 e.) 150** 2.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. If

**a.) 10 b.) 16 c.) 58 d.) 79 e.) 100** 3.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Answer the following. [L3]  
   
 4.) What fractions lies exactly halfway between

**a.) b.) c.) d.) e.)**  4.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5.) The formula for surface area (A) of a rectangular prism is  
 where l is length, h is height, and w is  
 width. By doubling each of the dimensions (l, h, w), the surface  
 area will be multiplied by what factor?  **a.) 2 b.) 4 c.) 6 d.) 8 e.) 12** 5.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Answer the following. [L4]

6.) The sides of an acute triangle are 14 cm, 18cm, and 20cm.  
 Which of the following equations, when solved for x, gives the  
 measure of the smallest angle of the triangle? Note: for any triangle  
 with sides a, b, and c that are opposite angles A, B, and C.

**a.) b.) c.)** 6.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**d.) e.)**

**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.)