Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Directions: You may use a scientific or graphing calculator (TI-84 or below) to complete this test.

Solve the equation. Write you answer in the blank provided on the right hand side of the page. Show all work for partial credit.

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

Solve the equation by factoring.

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

Solve the equation using the square root property.

1. (x-1)2  =4 4.\_\_\_\_\_\_\_\_\_\_

What number should be added to complete the square of this expression?

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

Solve the equation by completing the square.

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

Solve using the quadratic formula. **Find all solutions over the complex numbers**.

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

Solve. Show all work!!

1. I had to replace one of my windows last week. The area was 434 square inches. If the length was three more than twice the width, what were the dimensions of the window?

8.\_\_\_\_\_\_\_\_\_\_\_

1. 9.\_\_\_\_\_\_\_\_\_
2. 10.\_\_\_\_\_\_\_\_\_

Solve the inequality. Write your solution in interval notation.

1. 11.\_\_\_\_\_\_\_\_\_\_
2. 12.\_\_\_\_\_\_\_\_\_\_
3. 13.\_\_\_\_\_\_\_\_\_\_\_

Identify the unknown(s), setup an equation and draw any pictures/charts that are necessary for ***three out of four***  word problems. Then solve those three word problems.

1. Mr. Bell has decided to make the class a bunch of chocolate chip cookies. Due to his budget, Mr. Bell will need to mix in some store brand cookie dough ($1.50/lb) with Nestle© cookie dough ($3.30/lb). Mr. Bell can only spend $20.00 to get 10 pounds of cookie dough ($2.00/lb). How much of each brand will he need? Round to the nearest tenth of a pound.
2. Billy Bob can paint four rooms in my house in 10 hours. It takes his younger brother, Joe Bob, 30 hours to do the same job. How long would it the two brothers together to paint four rooms assuming no gain or loss in efficiency?
3. Two friends decide to meet in Houston for the Texans game next weekend. Deanna travels 231 miles in the same time that John travels 213 miles. Deanna's trip uses more interstate highways and she can average 6 mph more than John. What is Deanna's average speed?
4. SpongeBob wants to invest $93,000 to earn $10,500 per year. He can invest in B-rated bonds paying 14% per year or in stocks paying 8% per year. How much money should be invested in each to realize exactly $10,500 in interest per year?