General Algebra II Worksheet #10 Unit 8 page 1 _____

Write a second degree equation in one variable to solve each of the following problems. Express irrational solutions rounded to the nearest tenth. (Many of these problems have two solutions.) Show your work and your solutions neatly organized.

1. One number is 1 less than 3 times another. Their product is 10. What are the numbers?

2. One number is 4 more than another. Their product is 20. What are the numbers?

3. The sum of a number and its square is 0. What is the number?

Write a second degree equation in one variable to solve each of the following problems. Express irrational solutions rounded to the nearest tenth. (Many of these problems have two solutions.) Show your work and your solutions neatly organized.

4. One number is one less than three times another. The sum of their squares is 1. Find the numbers.

5. The area of a rectangle is 20 square inches. Find its dimensions if its length is 4 inches less than three times its width.

6. The area of a rectangle is 20 square inches. Find its dimensions if its length is one inch more than 3 times its width.

Write a second degree equation in one variable to solve each of the following problems. Express irrational solutions rounded to the nearest tenth. (Many of these problems have two solutions.) Show your work and your solutions neatly organized.

7. The length of the hypotenuse of a right triangle is 1 inch less than 5 times the length of the shorter leg. The length of the longer leg is 3 inches more than twice the length of the shorter leg. Find the length of each side of the triangle.

8. A rectangular garden that is 30 feet long and 15 feet wide is surrounded by a path of uniform width. Find the width of the path if its area is equal to the area of the garden.

Write a second degree equation in one variable to solve each of the following problems. Express irrational solutions rounded to the nearest tenth. (Many of these problems have two solutions.) Show your work and your solutions neatly organized.

9. The product of two consecutive odd integers is seven more than their sum. What are the integers?

10. A farmer uses 100 feet of fencing to enclose a rectangular region, using an existing fence as one side. If the total area enclosed is 1250 square feet, then find its length and width.