

## Algebra II Review Unit 6 page 1 \_\_\_\_\_

Solve each of the following equations using the **factoring method**. Show all of your work neatly organized.

1.  $2x^2 = 3x$

2.  $3x^2 + 13x = 10$

3.  $(3x + 1)(3x - 1) = 6x - 2$

Solve each of the following using the **square root property**. Show all of your work neatly organized. Express imaginary solutions in **bi** form. Express all square roots in simplest form (exact value).

4.  $x^2 - 25 = 0$

5.  $4x^2 - 5 = 0$

6.  $x^2 + 8 = 0$

Solve each of the following equations using the **complete the square** method. Express any **complex** solutions using **a + bi** form (exact value). Express any **irrational** solutions rounded to the nearest hundredth. Show all of your work neatly organized.

7.  $x^2 + 4x - 12 = 0$

8.  $x^2 + 3x - 1 = 0$

9.  $3x^2 - 2x + 1 = 0$

## Algebra II Review Unit 6 page 2

Solve each of the following equations using the **quadratic formula**. Express any **complex** solutions in **a + bi** form (exact value). Express any **irrational** solutions rounded to the nearest hundredth. Show all of your work neatly organized.

10.  $5x^2 + 2x - 3 = 0$

11.  $2x^2 - 5x - 4 = 0$

12.  $3x^2 + 2x + 2 = 0$

Solve each of the following equations. Express any **rational** solutions in simplest form. Express any **irrational** solutions rounded to the nearest hundredth. Express any **imaginary** solutions in **bi** form (exact value). Express any **complex** solutions in **a + bi** form. Show all of your work neatly organized. (Use any method you choose.)

13.  $3x^2 + 5x = 0$

14.  $2x^2 - 1 = 0$

15.  $2x^2 - 7x + 3 = 0$

16.  $5x^2 + x - 1 = 0$

17.  $4x^2 + 20x + 25 = 0$

18.  $3x^2 - 2x + 3 = 0$

## Algebra II Review Unit 6 page 3

Use a second degree equation in one variable to solve each of the following problems. Show your work neatly organized on this sheet in the space provided. Express irrational solutions rounded to the nearest tenth.

19. One number is 5 more than 3 times another. Their product is 2. What are the numbers?

20. The length of a rectangle is 3 inches less than twice its width. The area of the rectangle is 200 square inches. What are its dimensions?

21. The sum of a number and its square is 20. What is the number?

## Algebra II Review Unit 6 page 4

Use a second degree equation in one variable to solve each of the following problems. Show your work neatly organized on this sheet in the space provided. Express irrational solutions rounded to the nearest tenth.

22. The length of the hypotenuse of a right triangle is 3 inches less than 2 times the length of the shorter leg. The length of the longer leg is 3 inches more than the length of the shorter leg. What is the length of each side of the triangle?

23. A rectangular garden 20 feet long and 6 feet wide is surrounded by a path of uniform width. Find the width of the path if its area is 231 square feet.

24. The product of two consecutive odd integers is 19 more than 4 times their sum. What are the integers?