

**Find the discriminant on the quadratic equation and give the number and type of solutions of the equation.**

1)  $x^2 - 8x + 16 = 0$

2)  $s^2 + 7s + 11 = 0$

3)  $-4w^2 + w - 14 = 0$

Discriminant: \_\_\_\_\_

Discriminant: \_\_\_\_\_

Discriminant: \_\_\_\_\_

Types of Sol.: \_\_\_\_\_

Types of Sol.: \_\_\_\_\_

Types of Sol.: \_\_\_\_\_

4)  $5x^2 + 20x + 21 = 0$

5)  $5n^2 + 16x = 11x - 3x^2$

6)  $9r^2 + 2r + 1 = 8r$

Discriminant: \_\_\_\_\_

Discriminant: \_\_\_\_\_

Discriminant: \_\_\_\_\_

Types of Sol.: \_\_\_\_\_

Types of Sol.: \_\_\_\_\_

Types of Sol.: \_\_\_\_\_

7) What is the equation of the Quadratic Formula?

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**Use the quadratic formula to solve the equation. Make sure to simplify all radicals and answers. SHOW ALL WORK. No decimals.**

8)  $3x^2 - 12x = -12$

9)  $-3x^2 = 6x - 10$

10)  $x^2 + 6x = -15x$

11)  $7x - 5 + 12x^2 = -3x$

12)  $6 - 2x^2 = 9x + 15$

13)  $4 + 9x - 3x^2 = 2 - x$

**Application. Leave answers in decimal form.**

14) The height,  $h$ , in feet of an object above the ground is given by  $h(t) = -16t^2 + 64t + 190, t \geq 0$  where  $t$  is the time in seconds. Find the time it takes the object to strike the ground.