

## Quadratic Formula, Discriminant, and Complete the Square Review

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

Quadratic Formula	Discriminant
$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$	$b^2 - 4ac$

Solve by using the Quadratic Formula.

1.  $x^2 + 9x + 14 = 0$

2.  $7x^2 + 8x + 1 = 0$

3.  $2x^2 + 6x - 9 = 0$

4.  $x^2 - 2x = -1$

5.  $3x^2 + 1 = 5x$

6.  $x^2 + 2x - 2 = 0$

Find the value of the discriminant and use it to determine the nature of the roots (what kind and how many).

7.  $-3x^2 + 5x - 1 = 0$

8.  $2x^2 - 4x + 3 = 0$

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

10.  $6x^2 + 4 = 2x$

$x^2 - 6x + \underline{\quad} = 40$	
$x^2 - 6x + 9 = 40 + 9$	<i>add 9 to both sides</i>
$(x-3)^2 = 49$	<i>factor the perfect square trinomial</i>
$x-3 = \pm 7$	<i>take the square root of each side</i>
$x-3 = 7$ or $x-3 = -7$	
$x = 10$ or $x = -4$	

Solve by completing the square.

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

12.  $x^2 - 4x - 1 = 0$

13.  $x^2 + 6x = 16$

14.  $x^2 + 8x = 20$

15.  $x^2 + 16x - 7 = 0$

16.  $x^2 - 10x + 22 = 0$

