

Name _____ Date _____ Period _____

DIRECTIONS: For #1-2, solve by **completing the square**. Write the solutions in the provided blanks. Show all work.

1. $x^2 + 18x + 74 = 0$

2. $2y^2 - 12y + 50 = 0$

DIRECTIONS: For #3-4, solve by **using the quadratic formula**. Write the solutions in the provided blanks. Show all work.

3. $3y^2 - 8y + 6 = 0$

4. $r^2 - 4r - 8 = 0$

DIRECTIONS: For #5-6, use the **discriminant** to describe the **nature of the roots/solutions**. Write your answers in the provided blanks. Show all work.

5. $-3w^2 - 8w + 7 = 0$

6. $4x^2 - 6x + 5 = 0$

DIRECTIONS: For #7-16, solve by **any mathematical method**. Write the solutions in the provided blanks. Show all work.

7. $w^2 + 14w - 32 = 0$

8. $-6(m + 5)^2 = 96$

9. $24 = 6n - n^2$

10. $3x^2 + 20 = 2x^2 + 4x$

11. $3y^2 - 6y + 10 = 0$

12. $4(3x - 2)^2 + 5 = 33$

13. $p^2 - 8p = -6$

14. $\frac{4d^2+1}{4} = 3d$

15. $x - 2\sqrt{x} - 15 = 0$

16. $(2x + 1)^2 + 3(2x + 1) - 10 = 0$

DIRECTIONS: For #17, write a two- or three-sentence response to the questions.

- 17.** Select a test problem number from #7-16. What mathematical method did you select to solve for the variable? Explain why you chose this method.
