Name: _____ Date: _____

GCF & Factoring Trinomials when a is not equal to 1

- **Factoring Trinomials:** Writing the polynomial as a product of 2 binomials.
  - Check for GCF 1st. Divide out the GCF of each term if one exists.
  - When factoring $\mathbf{a}x^2 + \mathbf{b}x + \mathbf{c}$, first find factors of ***a*** and ***c***.
  - Check the products of the inner and outer terms to see if the sum is ***b***.
  - When **c** is POSITIVE, both signs inside the parentheses will be the same as the middle term.
  - When **c** is NEGATIVE, the signs in the parentheses will be different.

Factor each trinomial completely.

1. $x^2 + 9x + 14$	2. $x^2 - 4x - 21$	3. $5x^2 + 11x + 2$
4. $3x^2 + 16x - 35$	5. $3x^2 - 10x + 3$	6. $2x^2 - 7x + 5$
7. $3x^2 - 8x + 4$	8. $5x^2 - 39x - 8$	9. $14x^2 - 32x + 18$
10. $2x^2 - 17x + 35$	11. $15x^2 - 6x - 48$	12. $7x^2 + 61x - 90$
13. $5x^2 + 39x - 54$	14. $7x^2 - 45x + 18$	15. $x^2 - x - 90$

Factor each trinomial completely.

16. $x^2 + 10x + 25$

17. $2x^2 - 5x - 63$

18. $4x^2 - 17x - 42$

19. $2x^2 + 16x + 32$

20. $2x^2 - 7x + 5$

21. $9x^2 + 5x - 4$

22. $9x^2 - 6x + 1$

23. $9x^2 + 15x - 14$

24. $5x^3 + 30x^2 - 200x$

25. $3x^2 - 10x + 7$

26. $3x^2 + 19x + 6$

27. $15x^2 - 15x - 50$

28. The area of a rectangle is represented by the expression $6x^2 + 17x + 12$. The length is given as $(2x + 3)$. What is an expression for the width?

29. The area of a rectangle is represented by the expression $5x^2 + 12x + 7$. The length is given as $(x + 1)$. What is an expression for the width?