Factoring Intervention Packet Name _____

Greatest Common Factor/Difference of Squares Period _____ Date _____

Factor each polynomial by removing the common monomial factor.

1. $ax^2 + a$
2. $x^3 - x^2 + x$
3. $3x^2y - 6xy^2 + 12xy$
4. $25a^2b + 30ab^3$
5. $5a^2 + 10ab - 15b^2$
6. $6x^3y^2 + 14x^2y + 2x^2$

Factor each polynomial completely. ***If the polynomial cannot be factored, say it is prime.***

7. $a^2 - 9$
8. $x^2 - 49$
9. $4x^2 - 9y^2$
10. $x^2 - 36y^2$
11. $16a^2 - 25$
12. $a^2 - 4b^2$
13. $p^2 - q^2$
14. $144x^2 - 49y^2$
15. $6x^2 - 6$
16. $8x^2 - 12y^2$
17. $2x^2 - 98$
18. $12y^2 - 48$
19. $25x^2 - 49y^4$
20. $9x^4 - 25y^4$
21. $12a^2 - 12$
22. $x^4 - 16$
23. $25a^2x^2 - 1$
24. $x^8 - 1$

Factoring

Trinomials

Name _____

Period _____ Date _____

Factor each polynomial completely. ***If the polynomial cannot be factored, say it is prime.***

1. $x^2 + 8x + 12$
2. $a^2 + 10a + 25$
3. $m^2 - 9m + 20$
4. $k^2 - 4k - 12$
5. $g^2 - 4g + 3$
6. $x^2 - x - 12$
7. $x^2 + x - 12$
8. $r^2 - r - 6$
9. $a^2 + 5a - 24$
10. $x^2 - 2x - 24$
11. $y^2 + 12y + 20$
12. $x^2 - 3x - 28$
13. $y^2 - 10y + 9$
14. $a^2 - 6a - 40$
15. $m^2 - 16m + 48$
16. $x^2 - 3x - 54$
17. $x^2 - x - 56$
18. $t^2 - 2t - 48$
19. $x^2 - 7x - 60$
20. $b^2 + 7b - 44$
21. $y^2 - y - 72$
22. $g^2 - 12g - 64$
23. $y^2 - 9y + 18$
24. $x^2 + 4x - 21$

Factoring Name _____

Trinomials with a Leading Coefficient Other Than One Period _____ Date _____

Factor each polynomial completely. ***If the polynomial cannot be factored, say it is prime.***

1. $2x^2 + 7x + 6$
2. $3a^2 - 8a + 4$
3. $2m^2 - 3m - 14$
4. $3k^2 - k - 4$
5. $2g^2 - 7g - 4$
6. $6x^2 - 17x + 5$
7. $8x^2 - 10x + 3$
8. $3x^2 + 10x - 25$
9. $36a^2 + 12a + 1$
10. $3x^2 - 14x - 24$
11. $12y^2 + 7y + 1$
12. $2x^2 + 17x + 30$
13. $28y^2 - 18y + 2$
14. $4a^2 - 20a + 25$
15. $3m^2 - 13m - 30$
16. $2x^2 - 11x - 40$
17. $2x^2 + 23x + 45$
18. $3t^2 + 10t - 48$
19. $2x^2 - 25x + 50$
20. $3b^2 + 8b - 35$

Factoring Name _____

Sum and Difference of Cubes and Grouping Period _____ Date _____

Factor each polynomial completely. ***If the polynomial cannot be factored, say it is prime.***

Sum and Difference of Cubes

1. $x^3 - 27$

2. $x^3 - 1$

3. $x^3 + 125$

4. $x^3 - 8$

5. $8 + 64x^3$

6. $x^3 - 216$

Grouping

7. $x^4 + x^3 + x + 1$

8. $x^3 + 2x^2 - x - 2$

9. $x^3 - 3x^2 - x + 3$

10. $x^5 + x^3 + 8x^2 + 8$

11. $x^4 - x^3 + x - 1$

12. $x^5 - x^3 + 8x^2 - 8$

13. $x^3 - 4x^2 + 2x - 8$

14. $3x^3 + 4x^2 - 6x - 8$