Name:_____ Period:_____Date:_____

Factoring

Section I. Factor Out First

1. $15x^2 + 35x$

2. $a^3b^2c^4 + a^5bc^2$

3. $18k^4m^2 - 12k^3m^7$

4. $7q^4 - 28q^2 + 14q$

Section II. Factoring a Difference of Two Squares

5. $x^2 - 36$

6. $x^2 - 121$

7. $x^2 - 4$

8. $4x^2 - 81$

9. $9x^2 - 169y^2$

10. $25x^2 - 49y^2$

Section III. Double Factor

11. $x^4 - 81$

12. $x^4 - 16$

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

14. $x^4 - 6x^2 - 27$

Section IV. Factoring a Trinomial with a Leading Coefficient of 1

15. $x^2 + 13x + 36$

16. $x^2 - 8x + 15$

17. $x^2 + 2x - 24$

18. $x^2 - 10x - 56$

19. $x^2 + 5x - 6$

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

21. $x^2 - 11x - 12$

22. $x^2 - 10x + 9$

23. $x^2 - 16x + 64$

24. $x^2 + 8x + 16$

Section V. Recognizing the Switch of *a* and *c* in $ax^2 + bx + c$

25a. $x^2 + 7x + 10$

25b. $10x^2 + 7x + 1$

26a. $x^2 + 11x + 28$

26b. $28x^2 + 11x + 1$

27a. $x^2 - 6x - 16$

27b. $16x^2 - 6x - 1$

28a. $x^2 + 2x - 35$

28b. $35x^2 + 2x - 1$

Section VI. Factoring by Grouping

29. $5x^3 + 10x^2 + 3x + 6$

30. $2x^3 - 12x^2 - 3x + 18$

31. $3x^3 - 12x^2 + x - 4$

32. $4x^3 + 8x^2 - 9x - 18$

Section VII. Factoring with a Leading Coefficient and a Constant Greater than 1.

33. $3x^2 + 5x + 2$

34. $2x^2 + 3x - 27$

35. $4x^2 - 8x - 21$

36. $6x^2 + x - 40$

37. $5x^2 - 17x + 6$

38. $12x^2 - 19x - 18$

Section VIII. Factoring by Factoring out First

39. $2x^2 + 12x - 14$

40. $x^3 - 13x^2 + 40x$

41. $3x^2 - 27$

42. $3x^2 - 12x - 96$

43. $6x^3 - 36x^2 + 30x$

44. $2x^2y + 14xy - 16y$