Name Key _____ Period _____ Date _____

Expand and simplify each of the following in your notebook using a method of your choice.

1. $5(x + 2)$

$5x + 10$

2. $7x(x + y)$

$7x^2 + 7xy$

3. $5x(6x^2 + 10)$

$30x^3 + 50x$

4. $10y(6xy - 14)$

$60xy^2 - 140y$

5. $-2x^2(-2 + 6xy)$

$4x^2 - 12x^3y$

$-12x^3y + 4x^2$

6. $-6x(8 - 6x^3)$

$-48x + 36x^4$

$36x^4 - 48x$

7. $(x + 2)(x + 5)$

$x^2 + 5x + 2x + 10$

$x^2 + 7x + 10$

8. $(x - 6)(x + 9)$

$x^2 + 9x - 6x - 54$

$x^2 + 3x - 54$

9. $(x + 3)(x + 3)$

$x^2 + 3x + 3x + 9$

$x^2 + 6x + 9$

10. $(x - 5)(x + 5)$

$x^2 + 5x - 5x - 25$

$x^2 - 25$

11. $(x + 5)(y + 10)$

$xy + 10x + 5y + 50$

$10x + xy + 5y + 50$

12. $(x + y)(z + y)$

$xz + xy + yz + y^2$

$xy + xz + yz + y^2$

13. $(100 + x)(x - 100)$

$100x - 10{,}000 + x^2 - 100x$

$x^2 - 10{,}000$

14. $(x^2 + 1)(x + 9)$

$x^3 + 9x^2 + x + 9$

15. $(x - 5)(2x + 13)$

$2x^2 + 13x - 10x - 65$

$2x^2 + 3x - 65$

16. $(3m + 6)(4m + 11)$

$12m^2 + 33m + 24m + 66$

$12m^2 + 57m + 66$

17. $(11s + r)(-7r + s)$

$-77sr + 11s^2 - 7r^2 + rs$

$-7r^2 - 76rs + 11s^2$

18. $(6 - x)(x + 100)$

$6x + 600 - x^2 - 100x$

$-x^2 - 94x + 600$

19. $(3x + 10)(2x - 5)$

$6x^2 - 15x + 20x - 50$

$6x^2 + 5x - 50$

20. $(-y + 2)(-x - 3)$

$xy + 3y - 2x - 6$

$-2x + xy + 3y - 6$

21. $(x + 2)(x^2 + 5x + 6)$

$x^3+5x^2+6x+2x^2+10x+12$

$x^3+7x^2+16x+12$

22. $(y + 3)(y^2 - 6y + 1)$

$y^3-6y^2+y+3y^2-18y+3$

$y^3-3y^2-17y+3$

23. $(x + 3)(x^2 + 7x + 11)$

$x^3+7x^2+11x+3x^2+21x+33$

$x^3+10x^2+32x+33$

24. $(y + 5)(y^2 - 7y - 10)$

$y^3-7y^2-10y+5y^2-35y-50$

$y^3-2y^2-45y-50$

25. $(2x + 1)(x^2 - 6x + 2)$

$2x^3-12x^2+4x+x^2-6x+2$

$2x^3-11x^2-2x+2$

26. $(3y + 3)(4y^2 + 5y + 20)$

$12y^3+15y^2+60y+12y^2+15y+60$

$12y^3+27y^2+75y+60$

27. $(3x + 5)(5x^2 + 4x + 11)$

$15x^3+12x^2+33x+25x^2+20x+55$

$15x^3+37x^2+53x+55$

28. $(2y + 7)(8y^2 - 6y + 1)$

$16y^3-12y^2+2y+56y^2-42y+7$

$16y^3+44y^2-40y+7$

29. $(x^2 - 2x + 1)(x^2 + 5x + 6)$

$x^4+5x^3+6x^2-2x^3-10x^2-12x+x^2+5x+6$

$x^4+3x^3-3x^2-7x+6$

30. $(x^2 - 6x + 2)(x^2 + 3x + 2)$

x^2-6x+2

$2x^2+6x+4$

$-6x^3-18x^2-12x$

$x^4+3x^3+2x^2$

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