Algebra II **Name:** Key

Review for Factoring Test, Unit Six

Factor out the greatest common factor.

1. $14x^{10}+28x^{16}-35x^{15}$

$7x^{10}(2+4x^{6}-5x^{5})$

2. $36d^{5}g^{13}-54d^{7}g^{10}-72d^{3}g^{10}$

$18d^{3}g^{10}(2d^{2}g^{3}-3d^{4}-4)$

3. $10k^{12}n^{20}p^{9}-5k^{10}n^{15}p^{13}+25k^{10}n^{22}p^{12}$

$5k^{10}n^{15}p^{9}(2k^{2}n^{5}-p^{4}+5n^{7}p^{3})$

4. $16x^{3}y^{2}-20x^{2}+10xy^{3}$

$2x(8x^{2}y^{2}-10x+5y^{3})$

5. $6wk-36w^{3}+96w^{4}k^{2}$

$6w(k-6w^{2}+16w^{3}k^{2})$

6. $50g^{3}h^{6}+125gh^{3}-200g^{2}h^{2}$

$25gh^{2}(2g^{2}h^{4}+5h-8g)$

Factor each trinomial. (Watch out for those crafty GCF's!)

9. $5x^{2}-3x-2$

$(5x+2)(x-1)$

10. $x^{2}+3x-40$

$(x-5)(x+8)$

11. $3x^2 - 45x + 48$

$3(x^2 - 15x + 16)$

~~$3(x \quad)(x \quad)$~~

12. $2x^2 + 34x + 60$

$2(x^2 + 17x + 30)$

$2(x + 15)(x + 2)$

13. $2x^2 + 5x - 12$

$(2x - 3)(x + 4)$

14. $9x^2 + 6x - 3$

$3(3x^2 + 2x - 1)$

$3(3x - 1)(x + 1)$

15. $3x^2 - 21x + 30$

$3(x^2 - 7x + 10)$

$3(x - 2)(x - 5)$

16. $5x^2 - 10x - 15$

$5(x^2 - 2x - 3)$

$5(x - 3)(x + 1)$

17. $8x^2 - x - 9$

$8x \qquad x$

$(8x - 9)(x + 1)$

18. $6x^3 + 10x^2 - 16x$

$2x(3x^2 + 5x - 8)$

$2x(3x + 8)(x - 1)$

19. $4x^2 - 7x + 3$

$4x \quad 3 \quad x \quad 1$

$(4x - 3)(x - 1)$

20. $2x^2 - 4x - 16$

$2(x^2 - 2x - 8)$

$2(x - 4)(x + 2)$

21. $10x^2 + 4x - 6$

$2(5x^2 + 2x - 3)$

$2(5x - 3)(x + 1)$

22. $6x^2 + 13x - 5$

$6x \quad 1 \quad 5$

$3x \quad 5 \quad 2x \quad 1$

$(3x - 1)(2x + 5)$

Factor completely. (Again, watch out for those crafty GCF's!)

23. $2k^2 - 8$

$2(k^2 - 4)$

$2(k+2)(k-2)$

24. $144 - w^2$

$(12+w)(12-w)$

25. $25h^2 - 16j^2$

$(5h+4j)(5h-4j)$

26. $100v^2 - 900$

$100(v^2 - 9)$

$100(v+3)(v-3)$

27. $k^3 - 64$

$(k-4)(k^2 + 4k + 16)$

28. $8g^3 + 1$

$(2g+1)(4g^2 - 2g + 1)$

29. $100x^3 + 2700$

$100(x^3 + 27)$

$100(x+3)(x^2 - 3x + 9)$

30. $r^3 - 125$

$(r-5)(r^2 + 5r + 25)$

Factor by grouping.

31. $25x^3 - 5x^2 + 15x - 3$

$5x^2(5x-1)+3(5x-1)$

$(5x^2+3)(5x-1)$

32. $10v^3 + 2v^2 + 5v + 1$

$2v^2(5v+1)+1(5v+1)$

$(2v^2+1)(5v+1)$

33. $4r^3 - 6r^2 + 10r - 15$

$2r^2(2r-3)+5(2r-3)$

$(2r^2+5)(2r-3)$

34. $3a^3 - a^2 + 12a - 4$

$a^2(3a-1)+4(3a-1)$

$(a^2+4)(3a-1)$