**A2 Factoring Review** **Name** Key

**I. Factor by the Greatest Common Factor Method (Monomial).**

1. $3x^2+12y^2=$ $3(x^2+4y^2)$
2. $18x^2-12x=$ $6x(3x-2)$
3. $x^2+7x=$ $x(x+7)$
4. $3x^2-21x^3=$ $3x^2(1-7x)$
5. $-40r^8-16r^9=$ $-8r^8(5+2r)$
6. $a^2b+ab^3+ab=$ $ab(a+b^2+1)$
7. $-24+18c-12c^2=$ $-6(4-3c+2c^2)$
8. $3a^2b^2-9ab^2=$ $3ab^2(a-3)$
9. $-12x^2-6x=$ $-6x(2x+1)$
10. $60m^3+48m^2=$ $12m^2(5m+4)$

**II. Factor the trinomial using Factor/Sum. ALWAYS look for GCF *FIRST*!**

1. $x^2+7x+12=$ $(x+3)(x+4)$
2. $2b^2+11x+12=$ $(2b+3)(b+4)$
3. $x^2-12x+35=$ $(x-5)(x-7)$
4. $3x^2-16x+5=$ $(3x-1)(x-5)$
5. $m^2-17m+70=$ $(m-7)(m-10)$
6. $r^2-r-42=$ $(r-7)(r+6)$
7. $48-14b+b^2=$ $(b-6)(b-8)$
8. $b^2+5b+1=$ prime
9. $4c^2+7c+3=$ $(4c+3)(c+1)$
10. $x^2+7xy+6y^2=$ $(x+6y)(x+y)$
11. $4x^2-14x+12=$ $2(2x-3)(x-2)$
12. $6x^3-31x^2+35x=$ $x(3x-5)(2x-7)$
13. $3y^4-18y^3-21y^2=$ $3y^2(y-7)(y+1)$
14. $4x^2-4x-15=$ $(2x-5)(2x+3)$
15. $8v^2-44v+60=$ $4(2v-5)(v-3)$
16. $9a^2-18a+1=$ prime
17. $p^2-2p-63=$ $(p-9)(p+7)$
18. $-36-48d+9d^2=$ $3(3d+2)(d-6)$
19. $x^2+7xy+12y^2=$ $(x+3y)(x+4y)$
20. $2x^2+7xy-9y^2=$ $(2x+9y)(x-y)$
21. $3m^2-24m-60=$ $3(m-10)(m+2)$
22. $4x^2+12x+9=$ $(2x+3)^2$
23. $4x^2-24x+36=$ $4(x-3)^2$
24. $2x^4-26x^3+84x^2=$ $2x^2(x-7)(x-6)$

**III. Using Difference of Two Squares (DOTS).**

1. $y^2-25=$ $(y-5)(y+5)$
2. $36a^2-9b^2=$ $9(4a^2-b^2)$ $9(2a+b)(2a-b)$
3. $1-c^2=$ $(1-c)(1+c)$
4. $121m^2-n^2=$ $(11m-n)(11m+n)$
5. $p^4-q^{10}=$ $(p^2-q^5)(p^2+q^5)$
6. $y^4-36=$ $(y^2-6)(y^2+6)$
7. $9a^2-25b^2=$ $(3a-5b)(3a+5b)$
8. $100r^2-36=$ $4(25r^2-9)$ $4(5r-3)(5r+3)$
9. $4a^2b^2-25=$ $(2ab-5)(2ab+5)$
10. $16a^2-9b^2=$ $(4a-3b)(4a+3b)$
11. $49-a^2b^2=$ $(7-ab)(7+ab)$
12. $144-9x^2$ $9(16-x^2)$ $9(4-x)(4+x)$