always look for GCF 1st!

Factoring Notes

Common Factor *divide out what they ALL have in common	ex1: $3x^3-12x^2$ $3x^2(x-4)$ ex2: $5a^2b+10ab^2-15b^3$ $5b(a^2+2ab-3b^2)$
Trinomial ($a=1$) x^2+bx+c *what 2 #s mult. to get c & add to get b? → ans. are factors	ex1: $x^2+12x+35$ (+, •) $(x+7)(x+5)$ 35, 7, 5, 12 (•, +) ex2: $x^2-5x-36$ (+, •) $(x-9)(x+4)$ ex3: $2x^2-2x-12$ $2(x^2-x-6)$ divide out GCF $2(x-3)(x+2)$
Trinomial ($a\neq1$) #1: GCF? #2: a·c & find b #3: what 2 #s multiply to get ac & add to get b? #4: replace b w/ answers from step 3 #5: factor by grouping	ex1: $3x^2+11x-20$ #2 → $ac=-60$ (M), $b=11$ (A) } #3: 15 & −4 #4 $3x^2+15x-4x-20$ #5 $3x(x+5)-4(x+5)$ $\boxed{(x+5)(3x-4)}$
Difference of Squares ① has to be subtraction ② no middle term ③ perfect squares (+)(−)	ex1: x^2-36 $(x+6)(x-6)$ ex2: $4x^2-9$ $(2x+3)(2x-3)$ ex3: $3x^2-48$ $3(x^2-16)$ $3(x+4)(x-4)$