

# Factor Day 1

**GCF** when they ALL have something in common

**ex1**  $6y - 24$   
 $6(y - 4)$

**ex2**  $3x^2 - 6x$   
 $3x(x - 2)$

**ex3**  $4z^3 + 12z$   
 $4z(z^2 + 3)$

**ex4**  $3x^3 - 15x^2 + 12x$   
 $3x(x^2 - 5x + 4)$

**a=1** what multiplies to get c & adds to get b

**ex1**  $x^2 + 12x + 35$   
          ↑      ↑  
      add  multiply  
 $(x + 5)(x + 7)$

**ex2**  $x^2 - 6x + 9$   
 $(x - 3)(x - 3)$

**ex3**  $2x^2 - 2x - 12$   
 $2(x^2 - x - 6)$  ← always check for GCF 1st  
 $2(x - 3)(x + 2)$

**Perfect Squares** no middle term, both pieces are perfect sqs.  
\*must be subtract\*

**ex1**  $x^2 - 81$   
 $(x - 9)(x + 9)$   
          ↑      ↑  
      sq root them  
      one positive  
      one negative

**ex2**  $36 - x^2$   
 $(6 - x)(6 + x)$

**ex3**  $3x^2 - 48$   
 $3(x^2 - 16)$   
 $3(x - 4)(x + 4)$