

1. Look for common factor
2. Difference of squares  $a^2 - b^2 = (a+b)(a-b)$
3. General factoring

### FOIL

$$(4x-3)(3x+8)$$

$$12x^2 + 32x - 9x - 24$$

$$12x^2 + 23x - 24$$

← look  $12(-24) =$   
 $32(-9)$

### Reverse of FOIL

factor:  $12x^2 + 23x - 24$

$$12x^2 + ax + bx - 24$$

common factor  $\frac{12x^2 - 9x + 32x - 24}{3x(4x-3) + 8(4x-3)}$  common factor

common binomial  $(4x-3)(3x+8)$

$a+b = 23$   
 $ab = -288$   
(12)(-24)

-1	288
-2	144
-3	96
-4	72
-6	48
-8	36
-9	32
a	b

if you chose a and b in reverse order

$$12x^2 + ax + bx - 24$$

$$12x^2 + 32x - 9x - 24$$

$$4x(3x+8) - 3(3x+8)$$

$$(3x+8)(4x-3)$$

if you chose +3 as common factor binomials don't match (built in sign check.)

factor:  $18x^2 - 35x + 12$