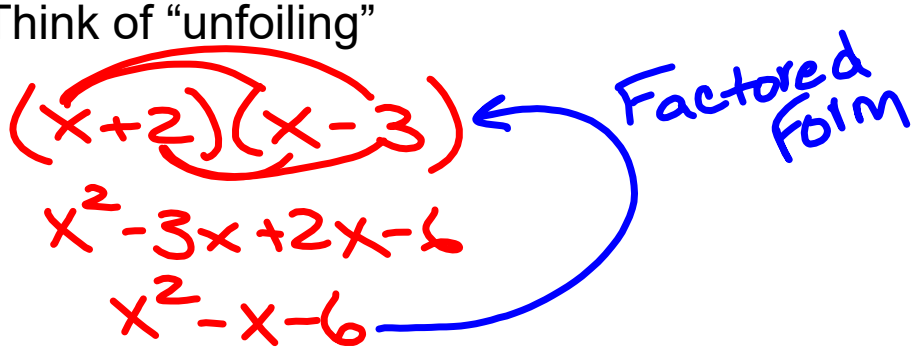
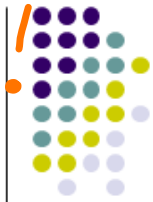
Factoring

Factoring

- Reverses the multiplication process
- Think of "unfoiling"



GCF Always the 1st Step!!



- Check to see if there is a common factor in each term
- Factor it out

$2x+4$

$2(x+2)$

x^3+x^2

$x^2(x+1)$

$2x^5-4x^3$

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

$-3x+9$

$-3(x-3)$

$$27b^5c^2 - 18b^8c$$

$9b^5c(3c - 2b^3)$

Check:

$9b^5c(3c - 2b^3)$

$27b^5c^2 - 18b^8c$ ✓ Multiply

Factoring the Difference of Perfect Squares

both

(Both terms)

10/4

$$36x^4-4x^2$$

1) GCF

$4x^2(9x^2-1)$

2) 2 sets parentheses

3) Square root of 1st term

4) Square root of 2nd term

5) one +
one −

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

$256x^2-1$

$(16x+1)(16x-1)$

$32x^2-2$

$2(16x^2-1)$

$2(4x+1)(4x-1)$

$16x^4-1$

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

$(4x^2+1)(2x+1)(2x-1)$ Factored Form

Factoring Difference of Squares

Degree must be even #
of Terms must be 2 (Binomial)
Must be able to take The √ of a & C

$ax^2 - c$

Must be a minus sign

Steps for Factoring Success
1. GCF?
2. Sq. root of 1st & Last
3. Make one addition & One Subtr.

Example: $162x^2 - 72$

$18(9x^2 - 4)$

$18(3x+2)(3x-2)$