

# Factoring Review

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## Factoring Methods:

1. Remove Greatest Common Factor

*Factor:*

a.  $28a^3b^3 + 42a^2b^4 - 14ab^5$

b.  $4x^2(x+2) - 3(x+2)$

2. Factoring by Grouping

*Factor:*

a.  $6x^2 - 3x + 12x - 6$

b.  $3x^3 + 9x^2 - 5x - 15$

3. Trinomials with  $a=1$

• *Standard form of quadratic expression:*  $ax^2 + bx + c$

• *If  $a=1$ , then  $ax^2 + bx + c = (x+m)(x+n)$*

$$mn = c \quad m + n = b$$

*Factor:*

a.  $x^2 + 14x + 45$

b.  $x^2 - 7x + 10$

c.  $x^2 + 6x - 27$

d.  $x^2 - 6x - 27$

4. Using the “ac” Method

- Find two factors of the product **ac**
- Re-write expression with 4 terms using the factors as coefficients of  $x$

*Factor:*

a.  $3x^2 + 10x + 8$

b.  $6x^2 - 17x + 5$

c.  $-4m^2 + 13mn - 10n^2$

5. Special Cases

- Difference of 2 Squares:

*Factor:* a.  $121x^2 - 49$

b.  $36x^4 - 9x^2y^6$

• *Perfect Square Trinomial:*

Factor: a.  $4x^2 + 12x + 9$

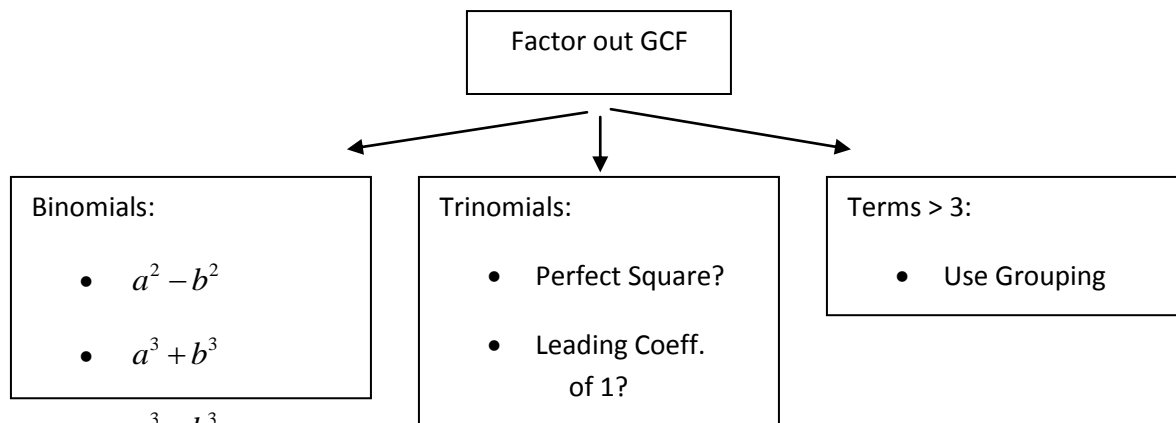
b.  $25x^2 - 60xy + 36y^2$

• *Sum or Difference of 2 cubes:*

Factor: a.  $27x^3 + 64y^3$

b.  $8p^3 - 125q^3$

**Steps for Factoring Polynomials:**



Try factoring these:

a.  $12x^4 - 26x^3 - 30x^2$

b.  $x^4 + 3x^3 - 8x - 24$