Thought Process For Factoring

1. Greatest Common Factor (GCF)

2. Do I have 4 terms? - Factor by Grouping

3. Do I have perfect cubes?
   \[ a^3 + b^3 = (a + b)(a^2 - ab + b^2) \]
   \[ a^3 - b^3 = (a - b)(a^2 + ab + b^2) \]

4. Do I have perfect squares?
   \[ a^2 - b^2 = (a + b)(a - b) \]
   OR
   \[ a^2 + 2ab + b^2 = (a + b)^2 \]
   \[ a^2 - 2ab + b^2 = (a - b)^2 \]

5. Do I have \( x^2 + bx + c \) ?
   If so, factor by talking backwards.

6. Do I have \( ax^2 + bx + c \) ?
   If so, ac Method (arcs)