## Objective 6 Factor sum and difference of cubes

in the form

$x^3 + c^3$ or $x^3 - c^3$

1) Write the terms as perfect cubes
2) Memorize the pattern

Difference of 2 cubes $x^3 - c^3 = (x - c)(x^2 + cx + c^2)$

EX: $x^3 - 8$

# Solving Equations using Quadratic Techniques (7.3)

Quadratic Form: $ax^2 + bx + c = 0$

$a(\quad)^2 + b(\quad) + c = 0$

Rewrite higher degree polynomials in quadratic form, then solve

Example: $x^4 + 13x^2 + 36 = 0$

$ax^2 + bx + c = 0$

Example: $x^4 - 17x^2 + 16 = 0$

$(\quad)^2 - 17\ (\quad) + 16 = 0$

Example: $x^3 + 216 = 0$

Sum of 2 cubes (5.4)

$$4r^6 - 9r^4 = 0$$

Example: $x^{\frac{1}{2}} - x^{\frac{1}{4}} - 6 = 0$

Example: $c^{\frac{2}{3}} + 7c^{\frac{1}{3}} + 12 = 0$