

Factoring

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① Always try Greatest Common Factor First!!!

$$3x^2 + 6x$$
$$3x(x+2)$$

② Difference of Two Squares

$$9x^2 - 25$$
$$(3x+5)(3x-5)$$

③ Trial & Error (Trinomial Factoring)

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

④ Difference of Cubes $x^3 - a^3 = (x-a)(x^2 + ax + a^2)$
Sum of Cubes $x^3 + a^3 = (x+a)(x^2 - ax + a^2)$

$$8x^3 + 125$$

$$a=2x \quad b=5 \quad (2x+5)(4x^2 - 10x + 25)$$

⑤ Grouping

$$x^3 - 2x^2 + 3x - 6$$
$$x^2(x-2) + 3(x-2)$$
$$(x-2)(x^2+3)$$