

tip1: $a^3x^3 + b^3$

$$= (ax + b)(a^2x^2 - abx + b^2)$$

tip2: $a^3x^3 - b^3$

$$= (ax - b)(a^2x^2 + abx + b^2)$$

(1) $-125x^3 - 64$

$$= -(125x^3 + 64)$$

$$= -(5x + 4)(25x^2 - 20x + 16)$$

(2) $x^3 + 64$

$$= (x + 4)(x^2 - 4x + 16)$$

(3) $-x^3 - 64$

$$= -(x^3 + 64)$$

$$= -(x + 4)(x^2 - 4x + 16)$$

(4) $8x^3 - 729$

$$= (2x - 9)(4x^2 + 18x + 81)$$

(5) $125 - 8x^3$

$$= -(8x^3 - 125)$$

$$= -(2x - 5)(4x^2 + 10x + 25)$$

(6) $125x^3 + 343$

$$= (5x + 7)(25x^2 - 35x + 49)$$

(7) $729 - 64x^3$

$$= -(64x^3 - 729)$$

$$= -(4x - 9)(16x^2 + 36x + 81)$$

(8) $125 - 8x^3$

$$= -(8x^3 - 125)$$

$$= -(2x - 5)(4x^2 + 10x + 25)$$

(9) $-x^3 - 8$

$$= -(x^3 + 8)$$

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

(10) $54 - 2x^3$

$$= -2(x^3 - 27)$$

$$= -2(x - 3)(x^2 + 3x + 9)$$

(11) $27x^3 + 125$

$$= (3x + 5)(9x^2 - 15x + 25)$$

(12) $x^3 + 64$

$$= (x + 4)(x^2 - 4x + 16)$$

(13) $729 - 125x^3$

$$= -(125x^3 - 729)$$

$$= -(5x - 9)(25x^2 + 45x + 81)$$

(14) $8x^3 + 1$

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

(15) $64x^3 + 27$

$$= (4x + 3)(16x^2 - 12x + 9)$$

(16) $8 - x^3$

$$= -(x^3 - 8)$$

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

(17) $x^3 + 125$

$$= (x + 5)(x^2 - 5x + 25)$$

(18) $1 - 125x^3$

$$= -(125x^3 - 1)$$

$$= -(5x - 1)(25x^2 + 5x + 1)$$

(19) $64 - 125x^3$

$$= -(125x^3 - 64)$$

$$= -(5x - 4)(25x^2 + 20x + 16)$$

(20) $8 - 27x^3$

$$= -(27x^3 - 8)$$

$$= -(3x - 2)(9x^2 + 6x + 4)$$