

* Cube Formulae

$$\textcircled{1} (a+b)^3 = a^3 + b^3 + 3ab(a+b) \text{ or} \\ a^3 + b^3 + 3a^2b + 3ab^2$$

$$\textcircled{2} (a-b)^3 = a^3 - b^3 - 3ab(a-b) \text{ or} \\ a^3 - b^3 - 3a^2b + 3ab^2$$

$$\textcircled{3} a^3 + b^3 = (a+b)^3 - 3ab(a+b)$$

$$\textcircled{4} a^3 + b^3 = (a+b)[(a+b)^2 - 3ab]$$

$$\textcircled{5} a^3 + b^3 = (a+b)(a^2 + b^2 - ab)$$

$$\textcircled{6} a+b = \frac{a^3 + b^3}{a^2 + b^2 - ab}$$

$$\textcircled{7} a^3 - b^3 = (a-b)^3 + 3ab(a-b)$$

$$\textcircled{8} a^3 - b^3 = (a-b)(a^2 + b^2 + ab)$$

$$\textcircled{9} a^3 - b^3 = (a-b)[(a-b)^2 + 3ab]$$

$$\textcircled{10} a^2 + b^2 + ab = \frac{a^3 - b^3}{a-b}$$