

Разность и сумма кубов



$$\begin{aligned}(a - b)(a^2 + ab + b^2) &= \\ &= a^3 + a^2b + ab^2 - a^2b - ab^2 - b^3 = \\ &= a^3 - b^3\end{aligned}$$

$$(a - b)(a^2 + ab + b^2) = a^3 - b^3$$

$$a^3 - b^3 = (a - b)(a^2 + ab + b^2)$$

Формула разности кубов

$$a^3 + b^3 = (a + b)(a^2 - ab + b^2)$$

Формула суммы кубов

Например:

$$a)(x + y)(x^2 - xy + y^2) = x^3 + y^3$$

$$б)(a - c)(a^2 + ac + c^2) = a^3 - c^3$$

$$в)(x - 1)(x^2 + x + 1) = x^3 - 1$$

$$г)(2 + y)(4 - 2y + y^2) = 8 + y^3$$

$$a)z^3 - a^3 = (z - a)(z^2 + za + a^2)$$

$$б)x^3 + y^3 = (x + y)(x^2 - xy + y^2)$$

$$в)8 - x^3 = (2 - x)(4 + 2x + x^2)$$

$$г)a^3 + 27 = (a + 3)(a^2 - 3a + 9)$$

$$д) 64x^3 + 8a^3 = (4x + 2a)(16x^2 - 8xa + 4a^2)$$

$$е) m^6 - n^3 = (m^2 - n)(m^4 + m^2n + n^2)$$

$$ж) 27a^6 + 8v^3 = (3a^2 + 2v)(9a^4 - 6a^2v + 4v^2)$$

Самостоятельно :

$$1) x^3 - y^3 = (x - y)(x^2 + xy + y^2)$$

$$2) m^3 + n^3 = (m + n)(m^2 - mn + n^2)$$

$$3) 8 + a^3 = (2 + a)(4 - 2a + a^2)$$

$$4) 27 - y^3 = (3 - y)(9 + 3y + y^2)$$

$$5)t^3 + 1 = (t + 1)(t^2 - t + 1)$$

$$6)1 - c^3 = (1 - c)(1 + c + c^2)$$

$$7)(c - e)(c^2 + ce + e^2)$$

$$8)p^3 + e^3$$

$$9)(x - 4)(x^2 + 4x + 16)$$

$$10)125 + a^3$$

$$11)(y + 1)(y^2 - y + 1)$$

$$12)1 + e^3$$

$$13)(1 + 3y)(1 - 3y + 9y^2)$$

$$14)8x^3 - 1$$