



Куб суммы и разности

$$1)(!!!) x^3 + 3x^2y + 3y^2x + y^3 =$$

$$= x^3 + x^2y + x^2y + x^2y + y^2x + y^2x + y^2x + y^3 = y^3 + x^2y + x^2y + x^2y + y^2x + y^2x + y^2x + x^3 =$$

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

$$= (y+x)(x+y)^2 = (x+y)^3$$

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

$$= x^3 - x^2y - x^2y - x^2y + y^2x + y^2x + y^2x - y^3 = -y^3 + y^2x + x^3 - x^2y - x^2y + y^2x - x^2y + y^2x =$$

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

$$3(x^2y) = 1 \cdot x^2y + 1 \cdot x^2y + 1 \cdot x^2y = x^2y(1+1+1)$$

$$a+b+c+d+e+f = h(a_h+b_h+c_h+d_h) + g(e_g+f_g) = h(a_h+b_h+c_h+d_h) + g(a_h+b_h+c_h+d_h) \cdot ()$$

$$a \cdot a^2 = a^3$$

$\parallel$   
 $(x+y)$

$$-ab + bc = -b(a-c) =$$

$$= -b \cdot a + (-b)(-c) =$$

$$= -ab + bc$$

$$x - y = (+1)(-x + y)$$

$$(ab)^2 = a^2 \cdot b^2$$

$$(x-y)^2 = (y-x)^2$$

$\parallel$   
 $(-1)(-x+y)^2 = (-1)^2 \cdot (-x+y)^2$