

Разложение многочленов на множители

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Способы разложения многочленов на множители

1. Вынесение общего множителя за скобки.
2. Способ группировки.
3. Разложение с помощью формул сокращенного умножения.



Вынесение общего множителя за скобки

Распределительное свойство

умножения $ab + ac - ad = a(b + c + d)$

$$5a + 5p = 5(a + p)$$

$$ax - ay = a(x - y)$$

$$4x + 5xy - 2x = x(4 + 5y - 2)$$



Разложи на множители

Устно

$6m + 6n$

$4 - 12x$

$-mn - mp$

$2b + 2c$

$9m + 6n$

$3 + 9y$

$-2a + 3ab$

$10x - 5y$

$5ab - 5ac$

$3x + 3y$

$8a - 16$

$-6 + 6a$

$4r - 4q$

$2 - 2b$

$5x - 15$



Разложи на множители

Письменно

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$$10x^3 + 5x^2$$

$$8a^4 - 12a^2$$

$$3m^2 + 6m^3$$

$$15y^3 - 5y$$

$$9a^5 - 12a^4$$

$$ab^2 + a^2b^3$$

$$m^2b + mb^2$$

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Формулы сокращенного умножения

•Письменно

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Смотри , не ошибись

Письменно

100

В

10

$$10x^3 + 5x^4$$

Письменно

$$10x^3 + 5x^2$$

$$ab^2 + a^2 b^3$$

$$8a^4 - 12a^2$$

$$m^2 b^3 + mb^2$$

$$3m^2 + 6m^3$$

$$3ab^2 + 6ba^2$$

$$15y^3 - 5y$$

$$18ab^2 - 9b^4$$

$$9a^5$$

$$a^m + a^{m+1}$$

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$$15y^3 - 5y$$

$$18ab^2 - 9b^4$$

$$9a^5 - 12a^4$$

$$a^m + a^{m+1}$$

$$ab^4 + a^4 b^3$$

$$m^2 b^3 + mb^2$$

$$3ab^2 + 6ba^2$$

$$18ab^2 - 9b^4$$

$$a^m + a^{m+1}$$

10

100

7y

42x



Найди ошибку

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-6ax



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Разложи на множители

Письменно

$$(m-n-p)(m-n+p)$$

$$(x+3y-z)(x+3y+z)$$

Письменно

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9

$$(4 + 8b - 2a)(4 - 8b + 16a)$$

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Способ группировки

$$10ay - 5cy + 2ax - cx =$$

$$= (10ay - 5cy) + (2ax - cx) =$$

$$= 5y(2a - c) + x(2a - c) =$$

$$= (2a - c)(5y + x)$$



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$$(x + y)(2a + 1)$$

$$(x + y)(5a - 1)$$

$$(m + n)(a + b)$$

$$(a - x)(5a - 7)$$

$$(a + b)(3x - 4y)$$

Письменно

$$10x^3 + 5x^2 = x^2(10x + 5) = x^2 \cdot 5(2x + 1) = 5x^2(2x + 1)$$

$$8a^4 - 12a^2 = a^2(8a^2 - 12) = a^2 \cdot 4(2a^2 - 3) = 4a^2(2a^2 - 3)$$

$$3m^2 + 6m^3 = m^2(3 + 6m) = m^2 \cdot 3(1 + 2m) = 3m^2(1 + 2m)$$

$$15y^3 - 5y = y(15y^2 - 5) = y \cdot 5(3y^2 - 1) = 5y(3y^2 - 1)$$

$$9a^5 - 12a^4 = a^4(9a - 12) = a^4 \cdot 3(3a - 4) = 3a^4(3a - 4)$$

$$a^2 + a^2 b^3 = a^2(1 + b^3)$$

$$m^2 b^3 + mb^2 = m^2 b^3 + mb^2 = mb^2(m + 1)$$

$$3ab^2 + 6ba^2 = 3ab^2 + 6ba^2 = 3ab^2 + 6a^2b = 3ab(b + 2a)$$

$$18ab^2 - 9b^4 = 9b^2(2a - b^2)$$

$$a^m + a^{m+1} = a^m(1 + a)$$



Примени различные способы

• Письменно

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$$3m^2 + 6m^3$$

$$15y^3 - 5y$$

$$9a^5 - 12a^4$$

$$5(a - y)(a + y)$$

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$$am + a^{m+1}$$

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$$am + a^{m+1}$$

$$(3 - x + y)(3 + x - y)$$



Молодцы!

Спасибо за работу.

