

Calcolo letterale

Scomposizione in fattori

Raccoglimento a fattor comune

- 1) $8a^2b - 12ab^3 - 24a^3b^2 = 4ab(2a - 3b^2 - 6a^2b)$
- 2) $18a^2b^2 - 21a^3b^2 - 9a^3b^3 = 3a^2b^2(6 - 7a - 3ab)$
- 3) $81a^n b^{n+2} - 36a^{3n} b^{2n} - 27a^{n+3} b^{2n+1} = 9a^n b^n (9b^2 - 4a^{2n} b^n - 3a^3 b^{n+1})$
- 4) $10x^4 y^6 + 100x^3 y^5 - 1000x^2 y^4 = 10x^2 y^4 (x^2 y^2 + 10xy - 100)$
- 5) $a(a-b) - b(b-a) = a(a-b) + b(a-b) = (a-b)(a+b)$
- 6) $ab(a-b)^2 + b^2(b-a)^2 = b(a-b)^2(a+b)$
- 7) $x^2(x-1) - 2x(x-1)^2 = x(x-1)(x-2(x-1)) = x(x-1)(2-x)$
- 8) $4x^2(x+1)^2 - 16x(x+1)^3 = 4x(x+1)^2(x-4(x+1)) = -4x(x+1)^2(3x+4)$
- 9) $(x^n - y^n)^2 + 2(x^n - y^n)(x^n + y^n) = (x^n - y^n)((x^n - y^n) + 2(x^n + y^n)) = (x^n - y^n)(3x^n + y^n)$
- 10) $(2x^n - 4y^{n+1})^2 - 2(x^n - 2y^{n+1})^3 = 4(x^n - 2y^{n+1})^2 - 2(x^n - 2y^{n+1})^3 = 2(x^n - 2y^{n+1})^2(2 - x^n + 2y^{n+1})$

Raccoglimenti parziali e successivi

- 1) $a^2 - ab - ax + bx = a(a-b) - x(a-b) = (a-b)(a-x)$
- 2) $am - an + bm - bn = a(m-n) + b(m-n) = (m-n)(a+b)$
- 3) $a^2(b-c) - 2abc + 2ac^2 = a^2(b-c) - 2ac(b-c) = a(b-c)(a-2c)$
- 4) $(a+b)(a-b-c) - b(b-a) + (a-b)(c-a) = (a+b)(a-b-c) + b(a-b) + (a-b)(c-a) = (a+b)(a-b-c) + (a-b)(b+c-a) = (a+b)(a-b-c) - (a-b)(a-b-c) = (a-b-c)(a+b-a+b) = 2b(a-b-c)$
- 5) $10x^2 - 1000xz - xy + 100yz = 10x(x-100z) - y(x-100z) = (x-100z)(10x-y)$

Differenza di due quadrati

- 1) $a^2 - 36 = (a+6)(a-6)$
- 2) $a^2b^4 - 16b^2 = b^2(a^2b^2 - 16) = b^2(ab+4)(ab-4)$
- 3) $a^{22}b^{44} - 9x^{12} = (a^{11}b^{22} - 3x^6)(a^{11}b^{22} + 3x^6)$
- 4) $a^4b^{4n+2} - x^{10n-2} = (a^2b^{2n+1})^2 - (x^{5n-1})^2 = (a^2b^{2n+1} + x^{5n-1})(a^2b^{2n+1} - x^{5n-1})$

$$5) \quad a^2 b^{4n+5} - b^3 x^{10n-2} = b^3 (a^2 b^{4n+2} - x^{10n-2}) = b^3 (ab^{2n+1} - x^{5n-1})(ab^{2n+1} + x^{5n-1})$$

$$6) \quad 10x^2 y^3 - 10^{2n+1} y^7 = 10y^3 (x^2 - 10^{2n} y^4) = 10y^3 (x - 10^n y^2)(x + 10^n y^2)$$