Lezione 44

Differenza di quadrati

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

$$\sqrt{x^4} =$$

$$x^2 - 25 = (x+5)(x-5)$$
$$a^2 - b^2 \quad (a+b)(a-b)$$

$$x^4 - 1 = (x^2+1)(x^2-1)$$
$$a^2 - b^2 \quad (a+b)(a-b)$$

$$\frac{1}{4} - x^2 = \left(\frac{1}{2}+x\right)\cdot\left(\frac{1}{2}-x\right)$$
$$a^2 - b^2 \quad (a+b)\cdot(a-b)$$

Quadrato di binomio

$$(a \pm b)^2 = a^2 \pm 2ab + b^2$$

$$9a^2 - 6ax + x^2 = (3a - x)^2$$

$$x^2y^2 - 10yz^2 + 25z^4 = (xy - 5z^2)^2$$

a^2 b^2

Cubo di binomio

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

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

1 1 1 1 2 1 1 3 3 1

$1 - x^6 - 3x^2 + 3x^4 = (1 - x^2)^3$

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

$a^6b^3 - 6a^4b^2 + 12a^2b - 8 = (a^2b - 2)^3$

$125a^9 + 150a^6b + 60a^3b^2 + 8b^3 = (5a^3 + 2b)^3$

Quadrato di trinomio

$(a+b+c)^2 = a^2+b^2+c^2+2ab+2ac+2bc$

$(a-b+c)^2 = a^2+b^2+c^2-2ab+2ac-2bc$

$(a+b-c)^2 = a^2+b^2+c^2+2ab-2ac-2bc$

$(a-b-c)^2 = a^2+b^2+c^2-2ab-2ac+2bc$

Es $a^2+x^2+81+2ax+18a+18x = (a+x+9)^2$

Es $9+3x-6z^3+\frac{x^2}{4}+z^6-xz^3$

$= \left(3+\frac{x}{2}-z^3\right)^2$