solve equations with CUBIC, QUARTIC, QUANTIC roots...

Any radical can be expressed as to fusion of many lower-grade radicals .

$\sqrt[2]{x^2\sqrt[2]{x}}$ gives as exponent exponent 5/4≈ 1

$\sqrt[2]{x^3\sqrt[2]{x^2\sqrt[2]{x}}}$ gives as exponent 17/8≈ 2

$\sqrt[2]{x^4\sqrt[2]{x^3\sqrt[2]{x^2\sqrt[2]{x}}}}$ gives as exponent 49/16≈ 3

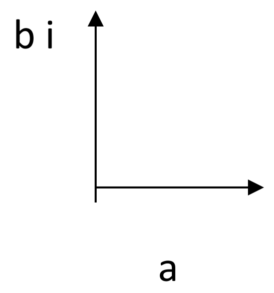
$\sqrt[2]{x^5\sqrt[2]{x^4\sqrt[2]{x^3\sqrt[2]{x^2\sqrt[2]{x}}}}}$ gives as exponent 129/32≈ 4

$\sqrt[2]{x^6\sqrt[2]{x^5\sqrt[2]{x^4\sqrt[2]{x^3\sqrt[2]{x^2\sqrt[2]{x}}}}}}$ gives as exponent 331/64≈ 5'1

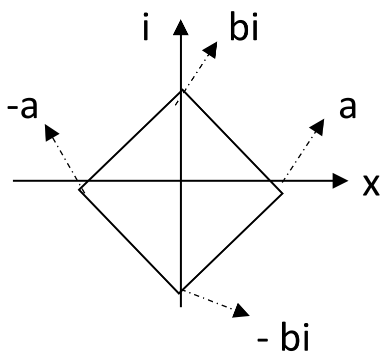
And in the case $\sqrt{x^7\sqrt{x^6\sqrt{x^5\sqrt{x^4\sqrt{x^3\sqrt{x^2\sqrt{x}}}}}}}$ gives 779/128≈ 6'01.

How can we to deduce , the degree from the root tells us the number of solutions to the equation.

And its representation on the coordinate axis varies according to the number of real or imaginary roots we find :



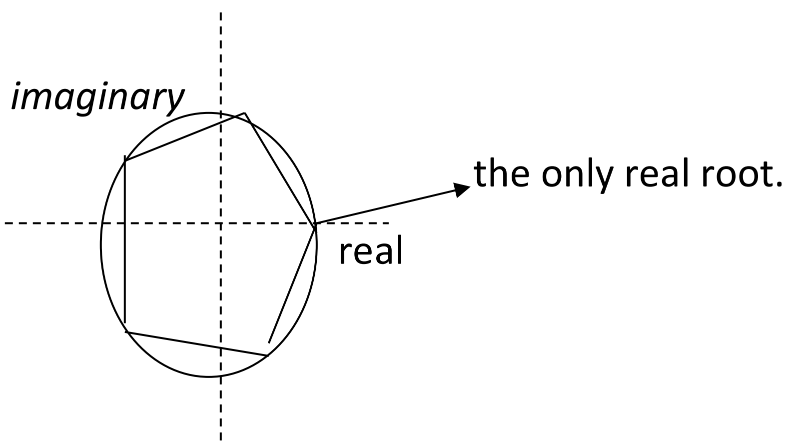
if in the example x^4 =-2 we find 2 real roots and 2 imaginary roots, the representation is:



which is perfectly understood

$x^5 = -a$

Them components of a Polyhedron represented by a fifth-order equation are obviously 5:



Solve roots of polynomials > 2 ond degree.

x^2 =-a →$x^2 \sim \sqrt{x^3\sqrt{x^2\sqrt{x}}} \sim -a$

$x^3 \sim \sqrt{x^4\sqrt{x^3\sqrt{x^2\sqrt{x}}}}$ ~-a

for example, if we have x^2 = -1:

$x^2 = \sim \sqrt{x^3\sqrt{x^2\sqrt{x}}}$ = -1

in this case we have 2 solutions: $\boxed{\begin{matrix} -1 & 1 & 1 \\ 1 & 1 & -1 \end{matrix}}$ and $\boxed{\begin{matrix} -1 & -1 & 1 \\ 1 & -1 & -1 \end{matrix}}$

$x^2 \sim \sqrt{1^3\sqrt{(1)^2\sqrt{(-1)}}}$= -1 $x^2 \sim \sqrt{(-1)^3\sqrt{1^2\sqrt{1}}}$

$x^2 \sim \sqrt{(-1)^3\sqrt{(-1)^2\sqrt{1}}}$= -1 $x^2 \sim \sqrt{(1)^3\sqrt{(-1)^2\sqrt{(-1)}}}$= -1

in x^3 = -1:

$x^3 \sim \sqrt{x^4\sqrt{x^3\sqrt{x^2\sqrt{x}}}}$= -1 : $\boxed{\begin{matrix} 1 & 1 & 1 & -1 \\ 1 & -1 & 1 & 1, \end{matrix}}$

$\boxed{\begin{matrix} 1 & 1 & -1 & -1 \\ 1 & -1 & -1 & 1 \end{matrix}}$ $\boxed{\begin{matrix} -1 & -1 & -1 & 1 \\ -1 & 1 & -1 & -1 \end{matrix}}$

$x^4 \sim \sqrt{x^5\sqrt{x^4\sqrt{x^3\sqrt{x^2\sqrt{x}}}}}$= -1 :

-1	1	1	1	1
1	1	-1	1	1
1	1	1	1	-1

-1	-1	1	1	1
-1	1	1	-1	1
1	-1	-1	1	1
1	1	1	-1	-1

-1	-1	1	-1	1
1	-1	-1	-1	1
1	-1	1	-1	-1

-1	-1	1	-1	-1

In the case where the independent term is -2: x ^{3} = -2

We can find that: $(\frac{x}{\sqrt[3]{2}})^3$= -1 :

$$(\frac{x}{\sqrt[3]{2}})^3 \sim \sqrt{(\frac{x}{\sqrt[3]{2}})^4\sqrt{(\frac{x}{\sqrt[3]{2}})^3\sqrt{(\frac{x}{\sqrt[3]{2}})^2\sqrt{(\frac{x}{\sqrt[3]{2}})}}}} = -1$$

If x ^{4} = 2: x ^{2} =$\pm\sqrt{2}$ → x ^{2} + $\sqrt{2}$= 0 → x=$\sqrt{-\sqrt{2}}$

→ x= -$\sqrt{-\sqrt{2}}$

→ x^2 - $\sqrt{2}$= 0 → x=+$\sqrt{\sqrt{2}}$

→ x= - $\sqrt{\sqrt{2}}$

if we now start from $x^5 = -1$:

1	-1	1	1	1	1
1	1	1	-1	1	1
1	1	1	1	1	-1

-1	-1	-1	1	1	1
-1	1	1	-1	1	1
-1	1	1	1	1	-1
1	-1	-1	1	1	1
1	1	-1	-1	1	1
1	1	-1	1	1	-1
1	1	1	1	-1	-1
1	-1	1	1	-1	1
1	1	1	-1	-1	1

-1	-1	-1	1	1	1
-1	-1	1	1	-1	1
1	-1	-1	1	-1	1
1	1	-1	1	-1	-1
-1	1	-1	1	1	-1
-1	1	-1	-1	1	1
-1	1	1	1	-1	-1

-1	-1	-1	1	-1	1
-1	1	-1	-1	-1	1
-1	1	-1	1	-1	-1

and

1	-1	-1	-1	-1	-1