Calculer $\sqrt[p]{a}$ $a \in [0; +\infty[$

$p \in \mathbb{N}^* = \{1; 2; 3; \cdots\}$

Soit $x_1 = x^p > a$

$$x_n = \frac{1}{p}\left((p-1)\, x_{n-1} + \frac{a}{x_{n-1}^{\,p-1}}\right)$$

$$\lim x_n = \sqrt[p]{a}$$

$$a^{\frac{1}{p}} = \sqrt[p]{a}$$

$a \in \mathbb{R}$, $a > 0$

$p \in \mathbb{N}^*$

$$a^{\frac{1}{p}}$$

$$3^{\frac{1}{7}} \qquad \sqrt{2}$$

$$x^{\frac{1}{p}} \qquad x_1, x_2, x_3, x_4, x_5, \ldots$$

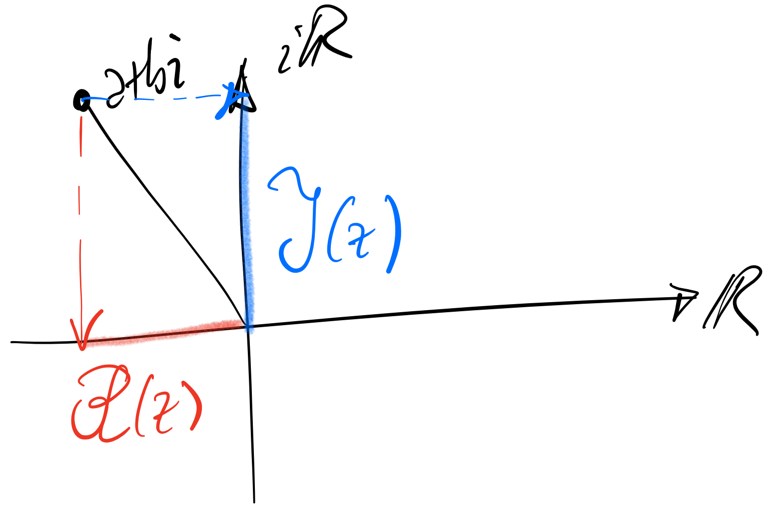
$$x_n = \frac{1}{p}\left((p-1)x_{n-1} + \frac{a}{x_{n-1}^{\,p-1}}\right)$$

$z = a + bi$

$\mathfrak{I}(z) = \mathrm{Im}(z) = b$ est la <u>partie imaginaire</u> de z

$\mathfrak{R}(z) = \mathrm{Re}(z) = a$ est la <u>partie réelle</u> de z

$\mathrm{Im}(z),\ \mathrm{Re}(z) \in \mathbb{R}$



$z + \overline{z} = 2\mathfrak{R}(z)$

$z - \overline{z} = 2\mathfrak{I}(z)\, i$

$a+bi + a - bi = 2a$

$a+bi - (a - bi) = 2bi$

$$\sqrt{3-2\sqrt{2}} \quad \sqrt{3+2\sqrt{2}}$$

$$3\sqrt{27} = 3\cdot\sqrt{9\cdot 3} = 3\sqrt{9}\cdot\sqrt{3}$$

$$\sqrt[3]{5\cdot\sqrt{5\cdot\sqrt{5}}} = \left(5\cdot\left(5\cdot 5^{1/2}\right)^{1/2}\right)^{1/3}$$

$$\sqrt{\sqrt{(\sqrt{5})^2}\sqrt{5}} = \sqrt{\sqrt{5^3}} = \left(5^1\cdot 5^{\frac{1}{2}}\cdot 5^{\frac{1}{4}}\right)^{\frac{1}{3}}$$

$$= \sqrt[4]{5^3} = 5^{\frac{7}{12}} = \sqrt[12]{5^7}$$

$$\sqrt[4]{5^4}\cdot\sqrt[4]{5^3}$$

$$\sqrt[4]{5^7} \qquad \sqrt[3]{\sqrt[4]{5^7}} = \sqrt[12]{5^7}$$

$$12x = -8$$

$$x = -\frac{8}{12} = -\frac{2}{3}$$

« Un seul nombre »

$$(1-4i)\,z = 6-7i$$

$\in \mathbb{C}$

$$z = \frac{6-7i}{1-4i} \cdot \frac{1+4i}{1+4i}$$