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REGLES DE CALCUL POUR LES RACINES

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Note importante (pour la suite):

- "racine" = racine carrée de ...
- "racine_n" = racine n'ième de ...
- "racine_m" = racine m'ième de ...

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RACINES SEULES

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- $\text{racine}(x) = x^{\frac{1}{2}}$

ex: $\text{racine}(4) = 4^{(1/2)} = 2$

- $\text{racine}_n(x) = x^{\frac{1}{n}}$

ex: $\text{racine}_3(27) = 27^{(1/3)} = 3$

- $\text{racine}_n(x^m) = x^{\frac{m}{n}}$

ex: $\text{racine}_3(8^2) = 8^{(2/3)} = 4$

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ADDITIONS ENTRE RACINES

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- $\text{racine}(x) + \text{racine}(x) = 2*\text{racine}(x)$

ex: $\text{racine}(16) + \text{racine}(16) = 2*\text{racine}(16) = 8$

ex: $\text{racine}(16) + \text{racine}(16) + \text{racine}(16) = 3*\text{racine}(16) = 12$

- $\text{racine}_n(x) + \text{racine}_n(x) = 2*\text{racine}_n(x)$

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MULTIPLICATIONS ENTRE RACINES

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- $\text{racine}(x) * \text{racine}(x) = \text{racine}(x^2) = x$

ex: $\text{racine}(49) * \text{racine}(49) = \text{racine}(49^2) = 49$

- $\text{racine}(x) * \text{racine}(y) = \text{racine}(x*y)$

ex: $\text{racine}(4) * \text{racine}(9) = \text{racine}(4*9) = \text{racine}(36) = 6$

- $\text{racine}_n(x) * \text{racine}_n(x) = \text{racine}_n(x^2)$

- $\text{racine}_n(x) * \text{racine}_n(y) = \text{racine}_n(x*y)$

- $\text{racine}_n(x) * \text{racine}_m(x) = \text{racine}_{n*m}(x^{(n+m)})$

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| DIVISIONS ENTRE RACINES |
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- $\text{racine}(x) / \text{racine}(x) = 1$

ex: $\text{racine}(16) / \text{racine}(16) = 1$

- $\text{racine}(x) / \text{racine}(y) = \text{racine}(x/y)$

ex: $\text{racine}(36) / \text{racine}(4) = \text{racine}(36/4) = \text{racine}(9) = 3$

- $\text{racine}_n(x) / \text{racine}_n(y) = \text{racine}_n(x/y)$

- $\text{racine}_n(x) / \text{racine}_m(x) = \text{racine}_{n*m}(x^{(m-n)})$

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| RACINES <--> RACINES |
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- $\text{racine}(\text{racine}(x)) = \text{racine}_{2*2}(x) = \text{racine}_4(x)$

ex: $\text{racine}(\text{racine}(256)) = \text{racine}_4(256) = 16$

- $\text{racine}_n(\text{racine}_m(x)) = \text{racine}_{n*m}(x)$

ex: $\text{racine}_3(\text{racine}(15625)) = \text{racine}_{3*2}(15625) = \text{racine}_6(15625) = 5$

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| A P P L I C A T I O N (S) |
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- démontrer que $\text{racine}(18) + \text{racine}(8) = \text{racine}(50)$
- $\text{racine}(18) + \text{racine}(8) =$
- $\text{racine}(9 \cdot 2) + \text{racine}(4 \cdot 2) =$
- $3 \cdot \text{racine}(2) + 2 \cdot \text{racine}(2) =$
- $\text{racine}(2) + \text{racine}(2) + \text{racine}(2) + \text{racine}(2) + \text{racine}(2) =$
- $5 \cdot \text{racine}(2)$
- et comme $5 = \text{racine}(5^2) = \text{racine}(25)$
- alors $5 \cdot \text{racine}(2) = \text{racine}(25) \cdot \text{racine}(2) =$
- $\text{racine}(25 \cdot 2) =$
- $\text{racine}(50)$

(fin)