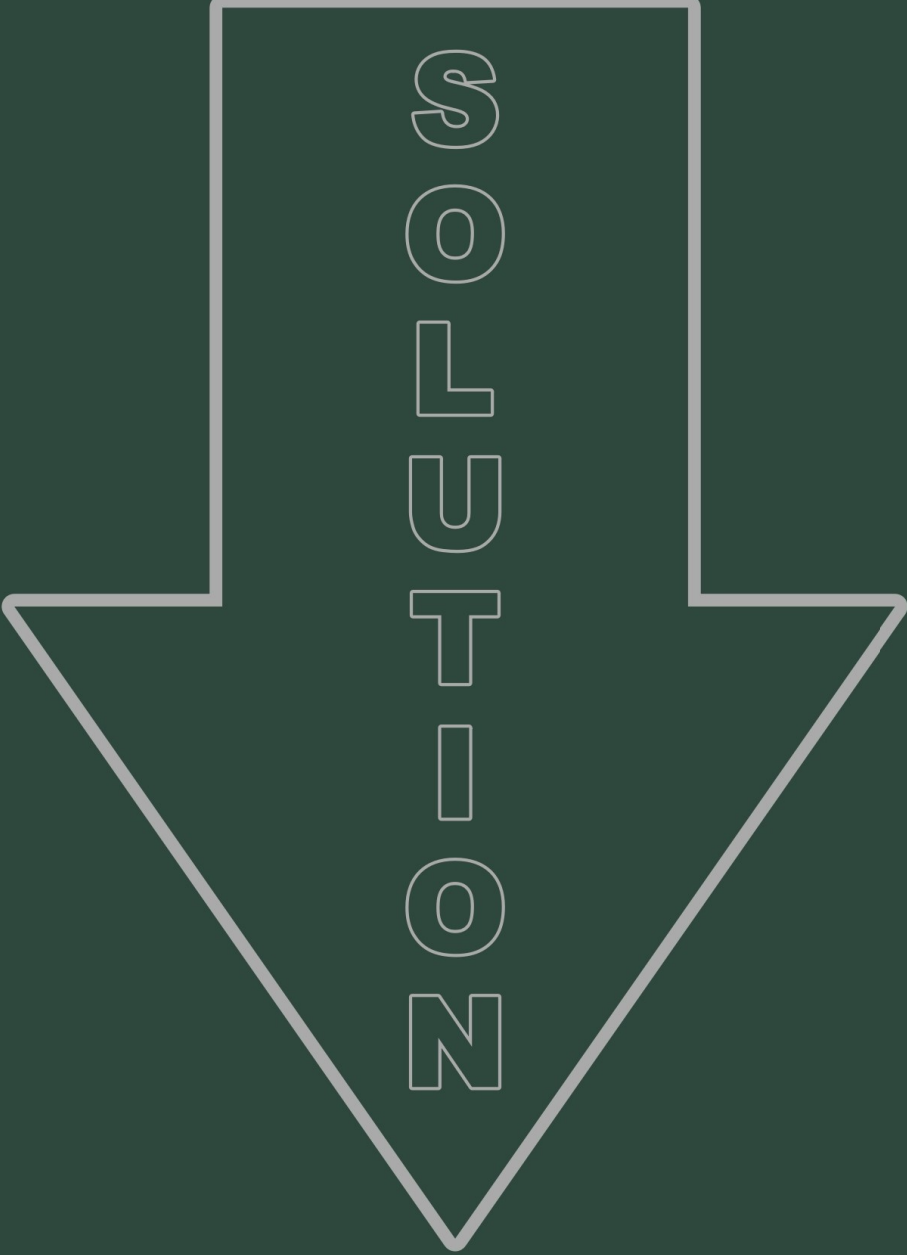


Trouver x dans ...

$$2^x \cdot 3^{(x^2)} = 631$$



----- R É P O N S E -----

$$2^x \cdot 3^{(x^2)} = 631$$

----- 2^x : de la base 2 vers la base 3 -----

$$(3^{(\log_3(2))})^x \cdot 3^{(x^2)} = 631$$

$$3^{((\log_3(2))x)} \cdot 3^{(x^2)} = 631$$

$$3^{((\log_3(2))x + x^2)} = 631$$

$$\ln(3^{((\log_3(2))x + x^2)}) = \ln(631)$$

$$((\log_3(2))x + x^2) \cdot \ln(3) = \ln(631)$$

$$((\log_3(2))x + x^2) = \ln(631)/\ln(3)$$

----- on obtient une équation du 2e degré de la forme $ax^2 + bx + c = 0$ -----

$$x^2 + \log_3(2)x - \ln(631)/\ln(3) = 0$$

----- application de la formule quadratique -----

$$\text{racine \#1: } x = (-\log_3(2) + \sqrt{(\log_3(2))^2 - 4 \cdot 1 \cdot (-\ln(631)/\ln(3))}) / (2 \cdot 1) \approx 2,127506$$

$$\text{racine \#2: } x = (-\log_3(2) - \sqrt{(\log_3(2))^2 - 4 \cdot 1 \cdot (-\ln(631)/\ln(3))}) / (2 \cdot 1) \approx -2,758436$$

----- résultats finaux -----

$$\blacksquare x \approx 2,127506$$

$$\blacksquare x \approx -2,758436$$