Algebra Equation x^4

$\left(\frac{\sqrt{3}}{x+1}\right)^2 + 1 = x^2$ $\quad x > 0$

$\frac{3}{(x+1)^2} = x^2 - 1$ $\quad (a + b)^2 = a^2 + 2ab + b^2$

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

$3 = x^4 - x^2 + 2x^3 - 2x + x^2 - 1$

$x^4 + 2x^{2-} - 2x - 4 = 0$

$x^3 (x + 2) - 2 (x + 2) = 0$

$(x^3 - 2)(x + 2) = 0$

$x^3 - 2 = 0$

$x^3 = 2$

$x = \sqrt[3]{2}$