Algebra Equation 4 solutions

$\frac{x-1}{x^2-3}$ + x – 3 = (x^2- 4)

$x^2 \neq 3$

$x \neq \pm\sqrt{3}$

x -1 + (x—3)($x^2 - 3$)= ($x^2 - 4$)($x^2 - 3$)

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

$x^4 – x^3 – 4x^2 + 2x + 4 = 0$

$x^4 – x^3 – 2x^2 - 2x^2 + 2x + 4 = 0$

$x^2(x^2 – x – 2) – 2 (x^2 – x – 2) = 0$

$(x^2 - 2) (x^2 – x – 2) = 0$

$(x^2 - 2) (x-2) (x+1) = 0$

Solution

x = 2

x = -1

$x = -\sqrt{2}$

$x = \sqrt{2}$

$\frac{x^2-4}{x+1}$ + 3 = $\frac{x+1}{x-1}$ $x \neq \pm 1$

($x^2 - 4$)(x – 1) + 3($x^2 - 1$) = $(x+1)^2$

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

$x^3 + x^2 – 6x = 0$

$x(x^2+x-6) = 0$

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

x = 0

x = 2

x = - 3