# Equation Algebra

$\frac{6}{x} - 2 + \frac{x+1}{x-1} = x - 1$

$x \neq 0$

$x \neq 1$

$\frac{6(x-1) + x\,(x+1)}{x\,(x-1)} = x + 1$

$\frac{x^2+7x-6}{x\,(x-1)} = x + 1$

$x^2 + 7x - 6 = (x^2 - 1)\,x$

$x^3 - x^2 - 8x + 6 = 0$

$(x - 3)\,(x^2 + ax - 2) = 0$

$ax^2 - 3x^2 = -x^2$

$(a - 3) = -1$

$a = 2$

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

$x - 3 = 0$

$x = 3$

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

$(x+1)^2 = 3$

$x + 1 = \pm\sqrt{3}$

$x = -1 \pm \sqrt{3}$