1) $\frac{4x-3}{3-2x} - \frac{4+5x}{3+2x} - \frac{3+x-10x^2}{4x^2-9} =$

$= \frac{(4x-3)(3+2x) - (4+5x)(3-2x) + (3+x-10x^2)}{9-4x^2} =$

$= \frac{12x+8x^2-9-6x-12+8x-15x+10x^2+3+x-10x^2}{9-4x^2} =$

$= \frac{8x^2-18}{9-4x^2} = \frac{-2\cdot(9-4x^2)}{9-4x^2} = -2$

$(3-2x)(3+2x) = 9-4x^2 = -(4x^2-9)$

~~$3+x-10x^2=0$, $D=1+120=121$~~

$x = \frac{-1\pm 11}{-20}$, ~~$x_1 = -\frac{1}{2}$, $x_2 = \frac{3}{5}$~~

2) $\left(\frac{x+1}{x-1} - \frac{x-1}{x+1} + 4x\right)\cdot\left(x-\frac{1}{x}\right) =$

$= \left(\frac{4x}{x^2-1} + 4x\right)\cdot\frac{x^2-1}{x} = 4x\cdot\frac{1+(x^2-1)}{x^2-1}\cdot\frac{x^2-1}{x} =$

$= 4x^2$

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

$= \frac{4x}{x^2-1}$