Solution

$\frac{1}{x-2}+\frac{x-1}{x+2}=1 \quad : \quad x=4$

Steps

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

Multiply by LCM *Show Steps*

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

Subtract 4 from both sides

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

Simplify

$x^2-2x=x^2-8$

Subtract x^2 from both sides

$x^2-2x-x^2=x^2-8-x^2$

Simplify

$-2x=-8$

Divide both sides by -2

$\frac{-2x}{-2}=\frac{-8}{-2}$

Simplify *Show Steps*

$x=4$

Verify Solutions

Find undefined (singularity) points: $x=2, x=-2$ *Show Steps*

Combine undefined points with solutions:

$x=4$

Graph

Plotting: $\frac{1}{x-2}+\frac{x-1}{x+2}-1$