

Zadatak 17. Ako je $f(x+1) = \frac{x-1}{x}$, odredi $(f^{-1})'(x)$.

Rješenje.

$$x+1=t \implies x=t-1,$$

$$f(t) = \frac{t-1-1}{t-1} = \frac{t-2}{t-1} \implies f(x) = \frac{x-2}{x-1},$$

$$x = \frac{y-2}{y-1} \implies y-2 = xy-x \implies y(1-x) = -x+2 \implies f^{-1}(x) = \frac{x-2}{x-1},$$

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