

6.26

Θέτουμε $h(x) = \frac{f(x) - x}{x - 1}$ οπότε προφανώς $\lim_{x \rightarrow 1} h(x) = 2$ (1)

Οπότε

$$\lim_{x \rightarrow 1} \frac{f(x) + 1}{[f(x) - 1]^2} \stackrel{(2)}{=} \lim_{x \rightarrow 1} \frac{(x-1)h(x) + x + 1}{[(x-1)h(x) + x - 1]^2} = \lim_{x \rightarrow 1} \frac{(x-1)h(x) + x + 1}{[(x-1)(h(x) + 1)]^2} =$$

$$= \lim_{x \rightarrow 1} \frac{(x-1)h(x) + x + 1}{(x-1)^2 (h(x) + 1)^2} = \lim_{x \rightarrow 1} \frac{(x-1)h(x) + x + 1}{(h(x) + 1)^2} \cdot \lim_{x \rightarrow 1} \frac{1}{(x-1)^2} =$$

$$= \frac{(1-1) \cdot 2 + 1 + 1}{(2+1)^2} \cdot (+\infty) = \frac{2}{9} \cdot (+\infty) = \boxed{+\infty}$$