Zadatak 14. Ako je $x_0=2^{-\log_4(4-2\sqrt{3})}$ te $f(x)=\dfrac{x^2-2x-3}{x^2+4x+3}$, izračunaj $f(x_0)$.

Rješenje. Najprije,

$$f(x)=\frac{(x-3)(x+1)}{(x+3)(x+1)}=\frac{x-3}{x+3},\quad x\neq -1;$$

a zatim

$$\begin{aligned} x_0 &= 2^{-\log_4(4-2\sqrt{3})}=2^{-\log_{2^2}(\sqrt{3}-1)^2}=2^{\log_2(\sqrt{3}-1)^{-1}}\\ &=\frac{1}{\sqrt{3}-1}\cdot\frac{\sqrt{3}+1}{\sqrt{3}+1}=\frac{\sqrt{3}+1}{2};\end{aligned}$$

$$f(x_0)=\frac{\frac{\sqrt{3}+1}{2}-3}{\frac{\sqrt{3}+1}{2}+3}=\frac{\sqrt{3}-5}{\sqrt{3}+7}\cdot\frac{7-\sqrt{3}}{7-\sqrt{3}}=\frac{12\sqrt{3}-38}{46}=\frac{6\sqrt{3}-19}{23}.$$