

2233

$$\begin{aligned} \text{a)} \quad \frac{\frac{4}{x} - x}{x + \frac{4}{x} + 4} &= \frac{\frac{4}{x} - x}{x + \frac{4}{x} + 4} \cdot \frac{x}{x} = \frac{4 - x^2}{x^2 + 4 + 4x} \\ &= \frac{2^2 - x^2}{x^2 + 2 \cdot 2x + 2^2} = \frac{(2-x)(2+x)}{(x+2)^2} = \frac{2-x}{2+x} \end{aligned}$$

$$\begin{aligned} \text{b)} \quad \frac{1-x}{x^{-1}-1} &= \frac{1-x}{x^{-1}-1} \cdot \frac{x}{x} = \frac{(1-x)x}{x^0-x} \\ &= \frac{(1-x)x}{1-x} = x \end{aligned}$$