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a) $$\frac{\frac{4}{x} - x}{x + \frac{4}{x} + 4} = \frac{\frac{4}{x} - x}{x + \frac{4}{x} + 4} \cdot \frac{x}{x} = \frac{4 - x^2}{x^2 + 4 + 4x}$$

$$= \frac{2^2 - x^2}{x^2 + 2 \cdot 2x + 2^2} = \frac{(2-x)(2+x)}{(x+2)^2} = \frac{2-x}{2+x}$$

b) $$\frac{1 - x}{x^{-1} - 1} = \frac{1 - x}{x^{-1} - 1} \cdot \frac{x}{x} = \frac{(1-x)x}{x^0 - x}$$

$$= \frac{(1-x)x}{1-x} = x$$