

101. Reducirajte izraz $\left(\frac{1}{1+\sqrt{a}} + \frac{1}{1-\sqrt{a}} - \frac{2+2a^2}{1-a^2}\right)\left(1+\frac{1}{a}\right)$

1. 1 2. 2 3. a 4. $2a$

$$\begin{aligned}
 & \left(\frac{1}{1+\sqrt{a}} + \frac{1}{1-\sqrt{a}} - \frac{2+2a^2}{1-a^2}\right)\left(1+\frac{1}{a}\right) = \\
 & = \left(\frac{1-\sqrt{a}+1+\sqrt{a}}{(1+\sqrt{a})\cdot(1-\sqrt{a})} - \frac{2+2a^2}{1-a^2}\right)\cdot\left(\frac{a+1}{a}\right) = \\
 & = \left(\frac{1+1+\sqrt{a}-\sqrt{a}}{1^2-\sqrt{a}^2} - \frac{2+2a^2}{1-a^2}\right)\cdot\frac{a+1}{a} = \\
 & = \left(\frac{2}{1-a} - \frac{2+2a^2}{(1-a)(1+a)}\right)\cdot\frac{a+1}{a} = \\
 & = \frac{2\cdot(1+a)-(2+2a^2)}{(1-a)(1+a)}\cdot\frac{a+1}{a} = \\
 & = \frac{2+2a-2-2a^2}{(1-a)(1+a)}\cdot\frac{1+a}{a} = \\
 & = \frac{2a-2a^2}{(1-a)(1+a)}\cdot\frac{\cancel{(1+a)}}{a} = \\
 & = \frac{2a\cdot(1-a)}{(1-a)\cdot a} = \frac{2\cdot\cancel{a}\cdot\cancel{(1-a)}}{\cancel{a}\cdot\cancel{(1-a)}} = \\
 & = 2
 \end{aligned}$$