

142. Reducirajte izraz $\frac{(1-x) \cdot (1-x^{-1/2})}{1-\sqrt{x}} + \frac{\sqrt{x}}{x}$

1. \sqrt{x} 2. $1/\sqrt{x}$ 3. $-\sqrt{x}$ 4. $-1/\sqrt{x}$

$$\frac{(1-x) \cdot (1-x^{-1/2})}{1-\sqrt{x}} + \frac{\sqrt{x}}{x} =$$

Prvo riješimo dio zadatka:

$$\frac{(1-x) \cdot (1-x^{-1/2})}{1-\sqrt{x}} = \frac{(1-x) \cdot \left(1 - \frac{1}{\sqrt{x}}\right)}{1-\sqrt{x}} = \frac{(1-x) \cdot \left(\frac{\sqrt{x}-1}{\sqrt{x}}\right)}{1-\sqrt{x}} =$$

$$= \frac{(1-x) \cdot \left(\frac{\sqrt{x}-1}{\sqrt{x}}\right) \cdot \frac{1+\sqrt{x}}{1+\sqrt{x}}}{1-\sqrt{x}} = \frac{(1-x) \cdot (\sqrt{x}-1) \cdot (\sqrt{x}+1)}{\sqrt{x} \cdot (1-\sqrt{x})(1+\sqrt{x})} = \frac{(1-x) \cdot (\sqrt{x^2}-1)}{\sqrt{x} \cdot (1-x)} =$$

$$= \frac{(1-x) \cdot (x-1)}{\frac{1-x}{1} \cdot \sqrt{x}} = \frac{1 \cdot (1-x) \cdot (x-1)}{(1-x) \sqrt{x}} = \frac{1 \cdot \cancel{(1-x)} \cdot (x-1)}{\cancel{(1-x)} \sqrt{x}} = \frac{x-1}{\sqrt{x}} \cdot \frac{\sqrt{x}}{\sqrt{x}} = \frac{(x-1)\sqrt{x}}{\sqrt{x^2}} =$$

$$= \frac{x\sqrt{x}-\sqrt{x}}{x} = \frac{x\sqrt{x}}{x} - \frac{\sqrt{x}}{x} = \sqrt{x} - \frac{\sqrt{x}}{x}$$

Sada to vratimo u zadatak:

$$\frac{(1-x) \cdot (1-x^{-1/2})}{1-\sqrt{x}} + \frac{\sqrt{x}}{x} = \sqrt{x} - \frac{\sqrt{x}}{x} + \frac{\sqrt{x}}{x} = \sqrt{x}$$