

122. Dokazati da je:

$$\sqrt{\sqrt{a} + \sqrt{\frac{a^2 - 4}{a}}} + \sqrt{\sqrt{a} - \sqrt{\frac{a^2 - 4}{a}}} = \frac{\sqrt{2a + 4}}{\sqrt[4]{a}}, a > 0$$

Kada kvadriramo levu i desnu stranu dobijamo:

$$\left(\sqrt{\sqrt{a} + \sqrt{\frac{a^2 - 4}{a}}} + \sqrt{\sqrt{a} - \sqrt{\frac{a^2 - 4}{a}}} \right)^2 = \left(\frac{\sqrt{2a + 4}}{\sqrt[4]{a}} \right)^2$$

$$\sqrt{a} + \sqrt{\frac{a^2 - 4}{a}} + 2 \cdot \sqrt{\left(\sqrt{a} + \sqrt{\frac{a^2 - 4}{a}} \right) \left(\sqrt{a} - \sqrt{\frac{a^2 - 4}{a}} \right)} + \sqrt{a} - \sqrt{\frac{a^2 - 4}{a}} = \left(\frac{\sqrt{2a + 4}}{\sqrt[4]{a}} \right)^2$$

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

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

$$2\sqrt{a} + 2 \cdot \sqrt{\frac{4}{a}} = \frac{2a + 4}{\sqrt{a}}$$

$$2\sqrt{a} + 2 \cdot \frac{2}{\sqrt{a}} = \frac{2a + 4}{\sqrt{a}}$$

$$\frac{2a}{\sqrt{a}} + \frac{4}{\sqrt{a}} = \frac{2a + 4}{\sqrt{a}}$$

$$\frac{2a + 4}{\sqrt{a}} = \frac{2a + 4}{\sqrt{a}}$$