Zadatak 3. Odredi peti član geometrijskog niza:

1) $1, \frac{\sqrt{2}}{2}, \frac{1}{2}, \ldots;$ **2)** $\sqrt{5}, \sqrt[4]{5}, 1, \ldots;$

3) $\sqrt[3]{3}, \sqrt[3]{9}, 3, \ldots;$ **4)** $\sqrt{2}, \sqrt[3]{2}, \sqrt[6]{2}, \ldots.$

Rješenje. **1)** $1, \frac{\sqrt{2}}{2}, \frac{1}{2}, \ldots \Longrightarrow a_1 = 1, q = \frac{a_2}{a_1} = \frac{\frac{\sqrt{2}}{2}}{1} = \frac{\sqrt{2}}{2}$

$$a_5 = a_1 \cdot q^4 = 1 \cdot \left(\frac{\sqrt{2}}{2}\right)^4 = \frac{4}{16} = \frac{1}{4};$$

2) $\sqrt{5}, \sqrt[4]{5}, 1, \ldots \Longrightarrow a_1 = \sqrt{5}, q = \frac{a_2}{a_1} = \frac{\sqrt[4]{5}}{\sqrt{5}} = \frac{\sqrt[4]{5}}{\sqrt[4]{5^2}} = \frac{1}{\sqrt[4]{5}};$

$$a_5 = a_1 \cdot q^4 = \sqrt{5}\frac{1}{5} = \frac{\sqrt{5}}{5};$$

3) $\sqrt[3]{3}, \sqrt[3]{9}, 3, \ldots \Longrightarrow a_1 = \sqrt[3]{3}, q = \frac{\sqrt[3]{9}}{\sqrt[3]{3}} = \sqrt[3]{3};$

$$a_5 = a_1 \cdot q^4 = \sqrt[3]{3}(\sqrt[3]{3})^4 = 3\sqrt[3]{9};$$

4) $\sqrt{2}, \sqrt[3]{2}, \sqrt[6]{2}, \ldots \Longrightarrow a_1 = \sqrt{2}, q = \frac{\sqrt[3]{2}}{\sqrt{2}} = \frac{\sqrt[6]{2^2}}{\sqrt[6]{2^3}} = \frac{1}{\sqrt[6]{2}};$

$$a_5 = a_1 \cdot q^4 = \sqrt{2}\frac{1}{\sqrt[6]{2^4}} = \sqrt[6]{2^3} \cdot \frac{1}{\sqrt[6]{2^4}} = \frac{1}{\sqrt[6]{2}}.$$