



## Potence z racionalnimi eksponenti

**Naloga 1.** Izračunaj (brez kalkulatorja):

a)  $0,04^{-1,5} \cdot \left(\frac{1}{125}\right)^{\frac{2}{3}},$

b)  $\left(\frac{1}{16}\right)^{-0,75} + 16^{0,5},$

c)  $\left(\frac{27}{8}\right)^{-\frac{2}{3}} - 1,44^{-\frac{1}{2}},$

d)  $\frac{15^{\frac{2}{3}} \cdot 3^{\frac{1}{3}}}{5^{-\frac{1}{3}}},$

e)  $9^{-0,5} - 8^{\frac{2}{3}} + (0,25)^{-\frac{3}{2}}.$

**Naloga 2.** Naj bo  $a > 0$ . Poenostavi spodnje izraze:

a)  $\left(a^{-\frac{3}{4}} \cdot a^{\frac{3}{2}}\right)^{-\frac{1}{3}} \cdot a \cdot \sqrt[4]{a},$

b)  $\sqrt[4]{a^3} \cdot \left(a^{-2} \cdot a^{\frac{1}{3}}\right)^{\frac{2}{5}},$

c)  $\left(a^{-\frac{2}{3}} \cdot \sqrt[4]{a^3}\right)^3 \cdot a^{\frac{3}{4}}.$

**Naloga 3.** Izračunaj:

a)  $\frac{72^{-\frac{1}{3}}}{0,25^{\frac{3}{2}} \cdot \sqrt[3]{81}},$

b)  $\frac{\sqrt[3]{0,125}}{48^{-\frac{3}{4}} \cdot \sqrt[4]{27}},$

c)  $\left(\frac{1}{16}\right)^{-0,75} \cdot 125^{-\frac{2}{3}} - \left(1\frac{11}{25}\right)^{1,5}.$

**Naloga 4.** Izračunaj vrednost izraza

a)

$$\sqrt{\left(\left(a^{-\frac{2}{3}}b^{\frac{1}{3}}\right)^{0,5} : \left(a^{-\frac{3}{4}} \cdot b^{-\frac{3}{4}}\right)^{\frac{2}{3}}\right)^{-3}}$$

za  $a = \frac{1}{16}$  in  $b = 2$ .

b)

$$\sqrt{\left(x^{-\frac{2}{3}}y^{\frac{3}{4}}\right)^{-2} : \left(x^{\frac{2}{3}}y^{-\frac{1}{3}}\right)^{\frac{3}{2}}}$$

za  $x = \frac{1}{64}$  in  $y = 0,25$ .

**Naloga 5.** Poenostavi izraz

$$\frac{x-y}{x^{\frac{1}{2}}-y^{\frac{1}{2}}} + \frac{x^{\frac{3}{2}}-y^{\frac{3}{2}}}{x+x^{\frac{1}{2}}y^{\frac{1}{2}}+y}.$$



Naloga 1. a) 5,    b) 12,    c)  $-\frac{7}{18}$ ,    d) 15,    e)  $4\frac{1}{3}$ .

Naloga 2. a)  $a$ ,    b)  $\sqrt[12]{a}$ ,    c)  $a$ .

Naloga 3. a)  $\frac{4}{9}$ ,    b) 4,    c)  $-1\frac{51}{125}$ .

Naloga 4. a)  $\sqrt[4]{a^{-1}}b^{-1} = 1$ ,    b)  $\sqrt[6]{x}\sqrt{y^{-1}} = 1$ .

Naloga 5.  $\frac{2}{\sqrt{x}+\sqrt{y}}$ .