

## 34. Operace s mocninami a odmocninami

- 1)  $\left(\frac{\sqrt{a^3}\sqrt{a}}{\sqrt[3]{a}\sqrt{a}}\right)^{-1} \cdot \sqrt[5]{\frac{a^{\frac{1}{2}}a^{-1}}{\sqrt[3]{a}}}$
- 2)  $\frac{\left(10^{\frac{1}{3}} \cdot 8^{\frac{1}{2}}\right)}{\left(25^{\frac{1}{4}} \cdot 4^{\frac{1}{8}}\right)^{-2}} \cdot \frac{\sqrt{2^3}\sqrt[4]{4}}{\sqrt[3]{2^4}\sqrt[8]{8}}$
- 3)  $\left(\frac{3x^{\frac{1}{3}}}{x^{\frac{2}{3}} - 2x^{\frac{1}{3}}} - \frac{x^{\frac{1}{3}}}{x^{\frac{4}{3}} - x^{\frac{1}{3}}}\right)^{-1} - \left(\frac{1-2x}{3x-2}\right)^{-1}$
- 4)  $\left(\frac{a\sqrt{2}}{2\sqrt{a}}\right)^{\frac{1}{4}} \cdot \left(\frac{2a^{-1}}{\sqrt[4]{2a^4}}\right)^{\frac{1}{2}} \cdot \left(\sqrt[4]{\frac{a^{\frac{5}{2}}}{(2a)^{-2}}}\right)^{-1}$
- 5)  $\frac{\sqrt[12]{a^5} \cdot b^{\frac{5}{6}} \cdot \sqrt{b^{-1}}}{a^{\frac{3}{4}} \cdot b^3 \cdot \sqrt[3]{a^2}}$
- 6)  $\frac{a\sqrt{a}}{\sqrt[5]{a^4}\sqrt[3]{a^2}} \cdot \frac{a^{\frac{1}{2}}a^{-1}}{\sqrt[3]{a}}$
- 7)  $\left(\sqrt[3]{\frac{x-y}{x+y}}\right)^2 \cdot \sqrt{\frac{x+y}{x-y}} \cdot \sqrt[3]{\frac{x+y}{x-y}} - \frac{x-y}{x+y}$
- 8)  $\left[\frac{(a^2\sqrt{b^5})^{\frac{2}{3}}}{\sqrt[3]{a^5}}\right]^{-1} \cdot \left[(a\sqrt{a})^{\frac{4}{3}}\right]^{-\frac{3}{2}}$
- 9)  $a^{\frac{1}{3}}\sqrt[3]{y^{\frac{1}{3}}a\sqrt[4]{y^{\frac{4}{3}}}} \cdot \sqrt{a} \cdot \sqrt[3]{y}$
- 10)  $\left(\frac{\sqrt{5}+\sqrt{3}}{\sqrt{5}-\sqrt{3}} + \frac{\sqrt{5}-\sqrt{3}}{\sqrt{5}+\sqrt{3}}\right)^3 + \left(\frac{3}{2+\sqrt{3}} + 3\sqrt{3}\right)^4$
- 11)  $\sqrt[5]{\left(\frac{\sqrt[3]{a}}{\sqrt{a} \cdot a^{-1}}\right)^3} \cdot \frac{\sqrt{a}\sqrt{a}\sqrt{a}}{\sqrt[4]{a}\sqrt{a}}$
- 12)  $\left(\frac{x^{-2}y^2(x-2)^{-2}}{x^0y^{-8}}\right)^{-2} \cdot \frac{x^2(x-2)^3}{x^4y^7}$
- 13)  $\sqrt[12]{\frac{a^4x^2}{c}} \cdot \sqrt[8]{\frac{a^3x^5}{c^6}} \cdot \sqrt[6]{\frac{c^5}{ax^3}}$

$$14) \left[ \frac{\left( a^{\frac{1}{4}} \cdot b^{-1} \right)^{-1}}{c^{-2} d^{\frac{1}{2}}} \right]^{-3} \cdot \left[ \frac{a^{\frac{3}{4}} \cdot \sqrt[3]{b^2} \cdot \sqrt{d^5}}{\left( c^{\frac{3}{2}} \right)^4} \right]^{-1}$$

$$15) \left[ \left( a^3 b \right)^{\frac{1}{3}} \right]^{\frac{1}{2}} : \left[ \left( a^3 b^{-2} \right)^{\frac{1}{2}} \right]^{-\frac{1}{3}}$$

$$16) \frac{\left[ (x-y)^{\frac{3}{5}} \right]^{\frac{4}{3}} + \sqrt[10]{(x-y)^{-8}}}{\sqrt[5]{(x-y)^{-2}}}$$

## Výsledky

### (34. Operace s mocninami a odmocninami)

- 1)  $a^{\frac{1}{6}}$
- 2)  $\frac{2^4}{\sqrt[4]{2}}$
- 3)  $\frac{x^2}{2x-1}$
- 4)  $\frac{1}{2}$
- 5)  $a^{\frac{1}{2}} \cdot b^{-\frac{8}{3}}$
- 6)  $a^{\frac{7}{5}}$
- 7) 0
- 8)  $a^6 b^{\frac{5}{3}}$
- 9)  $\sqrt[3]{a^2 y}$
- 10)  $8^3 + 6^4$
- 11)  $a$
- 12)  $\frac{x-2}{x^2 \cdot y^{13}}$
- 13)  $a^{\frac{1}{8}} \cdot x^{\frac{1}{24}} \cdot c^{\frac{1}{6}}$
- 14)  $\frac{\sqrt[3]{b}}{b^4 \cdot d}$
- 15)  $ab^{\frac{1}{6}}$
- 16)  $\frac{2}{\sqrt[5]{(x-y)^2}}$