

Pr: Zjednodušte výrazy

$$a) \frac{a^3+b^3}{a^2+b^2+2ab} = \frac{a^2-ab+b^2}{a+b} \quad [a \neq -b]$$

$$b) \frac{x^4-2x^3y+y^2x^2}{x^4-x^3y} = \frac{x-y}{x} \quad [x \neq 0, x \neq y]$$

$$c) \frac{1}{a+1} - \frac{2a}{a^2-1} = \frac{1}{1-a} \quad [a \neq \pm 1]$$

$$d) \frac{a^4-2a^3b+a^2b^2}{2a^3(a-b)} = \frac{a-b}{2a} \quad [a \neq 0, a \neq b]$$

$$e) (2\sqrt{3} + \sqrt{5})^2 - 2\sqrt{60} = 17$$

$$f) \frac{\sqrt{2}-\sqrt{3}}{1-\sqrt{2}} = -2-\sqrt{2}+\sqrt{3}+\sqrt{6} = (\sqrt{3}-\sqrt{2}) \cdot (1+\sqrt{2})$$

$$g) \sqrt{x^{\frac{1}{3}} \cdot x} : \sqrt[3]{(\sqrt{x} \cdot x^{-2})^2} = x^{\frac{5}{3}} \quad [x > 0]$$

$$h) (10^{\frac{1}{3}} 8^{-\frac{1}{2}})^{-3} (5^{\frac{1}{4}} 4^{\frac{1}{8}})^{-2} = 2^3 \cdot 5^{-\frac{3}{2}}$$

$$i) \sqrt{a \cdot \sqrt[3]{b}} : \sqrt[3]{b^{-1} \sqrt{a^3}} = b^{\frac{1}{2}} \quad [a > 0, b > 0]$$

$$j) \sqrt[5]{\frac{4}{\sqrt[3]{2}}} : \sqrt[3]{\frac{2}{\sqrt[5]{8}}} = 2^{\frac{1}{5}} = \sqrt[5]{2}$$

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$$k) \frac{1+\sqrt{3}}{1+|2-\sqrt{3}|+2|1-\sqrt{3}|} = 1 \quad \leftarrow \text{NESTHLI JSME ZADAT ANI SPOČÍTAT}$$

$$(a \pm b)^2 = a^2 \pm 2ab + b^2$$

$$(a \pm b)^3 = a^3 \pm 3a^2b + 3ab^2 \pm b^3$$

$$a^2 + b^2 = a^2 + b^2$$

$$a^2 - b^2 = (a+b)(a-b)$$

$$a^3 + b^3 = (a+b)(a^2 - ab + b^2)$$

$$a^3 - b^3 = (a-b)(a^2 + ab + b^2)$$

$$x^a \cdot x^b = x^{a+b}$$

$$\frac{x^a}{x^b} = x^a : x^b = x^{a-b}$$

$$\frac{1}{x^b} = x^{-b}$$

$$(x^a)^b = x^{ab}$$

$$(xy)^a = x^a y^a$$

$$\sqrt[n]{x} = x^{\frac{1}{n}}$$

$$\sqrt[n]{x^a} = x^{\frac{a}{n}}$$