

77. $\left(2\sqrt{x^4 - a^2x^2} - \frac{2a^2}{\sqrt{1-a^2x^{-2}}}\right) \cdot \frac{(x^2a^{-2} - 4 + 4a^2x^{-2})^{-\frac{1}{2}}}{2ax(x^2 - a^2)^{-\frac{1}{2}}}$ $x > 0$
 $a > 0$

$\left(2\sqrt{x^2(x^2 - a^2)} - \frac{2a^2}{\sqrt{1 - a^2 \cdot \frac{1}{x^2}}}\right) \cdot \frac{\sqrt{x^2 \cdot \frac{1}{a^2} - 4 + 4a^2 \cdot \frac{1}{x^2}}}{2ax \cdot \frac{1}{\sqrt{x^2 - a^2}}} =$

$\left(2\sqrt{x^2 \cdot x^2 - a^2} - \frac{2a^2}{\sqrt{\frac{1}{x^2}(x^2 - a^2)}}\right) \cdot \frac{\sqrt{x^2 - a^2}}{2ax \sqrt{\frac{x^2}{a^2} - 4 + 4 \cdot \frac{a^2}{x^2}}} =$

$\left(2x\sqrt{x^2 - a^2} - \frac{x \cdot 2a^2}{x \cdot \frac{1}{x} \sqrt{x^2 - a^2}}\right) \cdot \frac{\sqrt{x^2 - a^2}}{2ax \sqrt{\left(\frac{x}{a} - 2\frac{a}{x}\right)^2}} =$

$\left(\frac{2x(x^2 - a^2)}{\sqrt{x^2 - a^2}} - \frac{2a^2x}{\sqrt{x^2 - a^2}}\right) \cdot \frac{\sqrt{x^2 - a^2}}{2ax \left(\frac{x}{a} - 2\frac{a}{x}\right)} =$

$\frac{2x^3 - 2xa^2 - 2a^2x}{\cancel{\sqrt{x^2 - a^2}}} \cdot \frac{\cancel{\sqrt{x^2 - a^2}}}{2x^2 - 4a^2} =$

$\frac{x(2x^2 - 4a^2)}{2x^2 - 4a^2} = x$

$$a^{-n} = \frac{1}{a^n}$$

$$a^{\frac{1}{3}} = \sqrt[3]{a}$$

$$a^{\frac{1}{2}} = \sqrt{a}$$

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

$$a^{-\frac{1}{2}} = \frac{1}{\sqrt{a}}$$

$$a^m \cdot b^m = (a \cdot b)^m$$

$$\sqrt{a \cdot b} = \sqrt{a} \cdot \sqrt{b}$$

$$\sqrt{a^2} = a \quad \text{jeśli } a \geq 0$$

$$\sqrt{\frac{1}{x^2}} = \frac{1}{x}$$

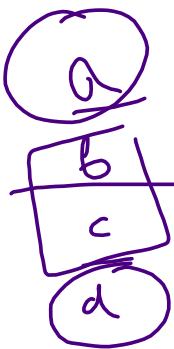
$$\sqrt{a^2} = |a|$$

↑
wartość
bezwzględna

$$\sqrt{(-5)^2} = 5$$

$$\sqrt{a^2} = \begin{matrix} + \\ - \end{matrix} a \quad \text{jeśli } a < 0$$

$$\sqrt{(-5)^2} = -(-5) = 5$$



$$\frac{a}{b} : \frac{c}{d} = \frac{a}{b} \cdot \frac{d}{c} = \frac{ad}{bc}$$

$$\left(a + \frac{1}{a}\right)^2 = a^2 + 2 + \frac{1}{a^2}$$

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

$$a \cdot \frac{1}{a} = \frac{a}{a} = 1$$

$$\left(\frac{a}{b} + \frac{b}{a}\right)^2 = \left(\frac{a}{b}\right)^2 + 2 + \left(\frac{b}{a}\right)^2$$

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

$$\frac{x^2}{a^2} - 4 + \frac{4a^2}{x^2}$$

$$\begin{aligned} a + \frac{b}{c} &= \\ \frac{a \cdot c}{c} + \frac{b}{c} &= \\ \frac{a \cdot c + b}{c} &= \end{aligned}$$

$$78. \frac{a \left(\frac{\sqrt{a} + \sqrt{b}}{2b\sqrt{a}} \right)^{-1} + b \left(\frac{\sqrt{b} + \sqrt{a}}{2a\sqrt{b}} \right)^{-1}}{\left(\frac{a + \sqrt{ab}}{2ab} \right)^{-1} + \left(\frac{b + \sqrt{ba}}{2ba} \right)^{-1}}$$

$$80. \frac{1}{2} \left(\sqrt{x^2 + a} + \frac{x^2}{\sqrt{x^2 + a}} \right) + \frac{a}{2} \frac{1 + \frac{x}{\sqrt{x^2 + a}}}{x + \sqrt{x^2 + a}}$$