2.082. $\frac{1}{b(abc+a+c)} - \frac{1}{a+\frac{1}{b+\frac{1}{c}}} : \frac{1}{a+\frac{1}{b}}$.

2.083. $\left(2 - x + 4x^2 + \frac{5x^2-6x+3}{x-1}\right) : \left(2x + 1 + \frac{2x}{x-1}\right)$.

2.084. $\left(\frac{2-b}{b-1} + 2\frac{a-1}{a-2}\right) : \left(b \cdot \frac{a-1}{b-1} + a \cdot \frac{2-b}{a-2}\right)$; $a = \sqrt{2} + 0,8$, $b = \sqrt{2} - 0,2$.

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

2.086. $\left(\frac{a-\sqrt{a^2-b^2}}{a+\sqrt{a^2-b^2}} - \frac{a+\sqrt{a^2-b^2}}{a-\sqrt{a^2-b^2}}\right) : \frac{4\sqrt{a^4-a^2b^2}}{(5b)^2}$.

2.087. $\frac{\sqrt{3}(a-b^2)+\sqrt{3}b\sqrt[3]{8b^3}}{\sqrt{2(a-b^2)^2+(2b\sqrt{2a})^2}} \cdot \frac{\sqrt{2a}-\sqrt{2c}}{\sqrt{\frac{3}{a}}-\sqrt{\frac{3}{c}}}$.

2.088. $(\sqrt{1-x^2}+1) : \left(\frac{1}{\sqrt{1+x}} + \sqrt{1-x}\right)$.

2.089. $\frac{8-n}{2+\sqrt[3]{n}} : \left(2 + \frac{\sqrt[3]{n^2}}{2+\sqrt[3]{n}}\right) - \left(\sqrt[3]{n} + \frac{2\sqrt[3]{n}}{\sqrt[3]{n}-2}\right)\frac{4-\sqrt[3]{n^2}}{\sqrt[3]{n^2}+2\sqrt[3]{n}}$.

2.090. $\frac{(a-b)^3(\sqrt{a}+\sqrt{b})^{-3}+2a\sqrt{a}+b\sqrt{b}}{a\sqrt{a}+b\sqrt{b}} + \frac{3(\sqrt{ab}-b)}{a-b}$.

2.091. $\frac{x^{1/6}-y^{1/6}}{x^{1/2}+x^{1/3}y^{1/6}} \cdot \frac{(x^{1/3}+y^{1/3})^2-4\sqrt[3]{xy}}{x^{5/6}y^{1/3}-x^{1/2}y^{2/3}} + 2x^{-2/3}y^{-1/6}$.

2.092. $\left(x\sqrt[3]{\frac{x-1}{(x+1)^2}} + \frac{x-1}{\sqrt[3]{(x^2-1)^2}}\right)^{-3/5} : (x^2-1)^{4/5}$.

2.093. $\left(\frac{\sqrt{3}+1}{1+\sqrt{3}+\sqrt{t}} + \frac{\sqrt{3}-1}{1-\sqrt{3}+\sqrt{t}}\right) \cdot \left(\sqrt{t} - \frac{2}{\sqrt{t}} + 2\right)$.

2.094. $\frac{m^{4/3}-27m^{1/3}\cdot n}{m^{2/3}+3\sqrt[3]{mn}+9n^{2/3}} : \left(1 - 3\sqrt[3]{\frac{n}{m}}\right) - \sqrt[3]{m^2}$.

2.095. $z^{\frac{p-3}{p^2+3p}} : z^{\frac{12}{9-p^2}} \cdot z^{\frac{3}{3p-p^2}}$.

2.096. $\sqrt{\frac{x}{x-a^2}} : \left(\frac{\sqrt{x}-\sqrt{x-a^2}}{\sqrt{x}+\sqrt{x-a^2}} - \frac{\sqrt{x}+\sqrt{x-a^2}}{\sqrt{x}-\sqrt{x-a^2}}\right)$.

2.097. $\frac{(\sqrt{x}+2)\left(\frac{2}{\sqrt{x}}-1\right)-(\sqrt{x}-2)\left(\frac{2}{\sqrt{x}}+1\right)-\frac{8}{\sqrt{x}}}{\left(2-\sqrt{x+2}\right):\left(\sqrt{\frac{2}{x}+1}-\frac{2}{\sqrt{x}}\right)}$.

2.098. $\frac{1-\sqrt{2t}}{\frac{1-\sqrt[4]{8t^3}}{1-\sqrt[4]{2t}}-\sqrt{2t}} \cdot \left(\frac{\sqrt[4]{\frac{1}{2t}}+\sqrt[4]{4t^2}}{1+\sqrt[4]{\frac{1}{2t}}} - \sqrt{2t}\right)^{-1}$.

2.099. $\frac{(x^{2/3}+2\sqrt[3]{xy}+4y^{2/3})}{(\sqrt[3]{x^4}-8y^3\sqrt[3]{x})\colon\sqrt[3]{xy}}\cdot\left(2-\sqrt[3]{\frac{x}{y}}\right)$.

2.100. $\frac{(z-z\sqrt{z}+2-2\sqrt{z})^2\cdot(1+\sqrt{z})^2}{z-2+\frac{1}{z}}-z\sqrt{z}\sqrt{\frac{4}{z}+4+z}$.

2.101. $\left(\frac{1}{a+\sqrt{2}}-\frac{a^2+4}{a^3+2\sqrt{2}}\right)\cdot\left(\frac{a}{2}-\frac{1}{\sqrt{2}}+\frac{1}{a}\right)^{-1}$.

2.102. $\left(\frac{(a-1)^{-1}}{a^{-3}}-(1-a)^{-1}\right)\cdot\frac{1+a(a-2)}{a^2-a+1}\cdot\sqrt{\frac{1}{(a+1)^2}}$.

2.103. $(\sqrt{ab}-ab\,(a+\sqrt{ab})^{-1}):(2\,((ab)^{1/2}-b)\cdot(a-b)^{-1})$.

2.104. $\left(\frac{a}{b}\sqrt[3]{b-\frac{4a^6}{b^3}}-a^2\sqrt[3]{\frac{b}{a^6}-\frac{4}{b^3}}+\frac{2}{ab}\sqrt[3]{a^3b^4-4a^9}\right):\frac{\sqrt[3]{b^2-2a^3}}{b^2}$.

2.105. $\left(\frac{1+\sqrt{1-x}}{1-x+\sqrt{1-x}}-\frac{1-\sqrt{1+x}}{1+x-\sqrt{1+x}}\right)^2\cdot\frac{x^2-1}{2}-\sqrt{1-x^2}$.

2.106. $\frac{4a^2-b^2}{a^6-8b^6}\cdot\sqrt{a^2-2b\sqrt{a^2-b^2}}\cdot\frac{a^4+2a^2b^2+4b^4}{4a^2+4ab+b^2}\cdot\sqrt{a^2+2b\sqrt{a^2-b^2}}$;
$a=4/3,\ b=0,25$.

2.107. $\frac{1+(a+x)^{-1}}{1-(a+x)^{-1}}\cdot\left(1-\frac{1-(a^2+x^2)}{2ax}\right);\ x=\frac{1}{a-1}$.

2.108. $\left(\frac{a}{b}+\frac{b}{a}+2\right)\left(\frac{a+b}{2a}-\frac{b}{a+b}\right):\left(\left(a+2b+\frac{b^2}{a}\right)\cdot\left(\frac{a}{a+b}+\frac{b}{a-b}\right)\right)$;
$a=0,75,\ b=4/3$.

2.109. $\left(-4a\sqrt[3]{\frac{\sqrt{ax}}{a^2}}\right)^3+(-10a\sqrt{x}\cdot\sqrt{(ax)^{-1}})^2+\left(-2\left(\sqrt[3]{a\sqrt[4]{\frac{x}{a}}}\right)^2\right)^3$;
$a=3\frac{4}{7},\ x=0,28$.

2.110. $\frac{\sqrt{c-d}}{c^2\sqrt{2c}}\left(\sqrt{\frac{c-d}{c+d}}+\sqrt{\frac{c^2+cd}{c^2-cd}}\right);\ c=2,\ d=1/4$.

2.111. $\frac{(ab^{-1}+a^{-1}b+1)(a^{-1}-b^{-1})^2}{a^2b^{-2}+a^{-2}b^2-(ab^{-1}+a^{-1}b)}$.

Odpovědi:

2.082. -1 **2.083.** $2x-1$ **2.084.** 1 **2.085.** 1 **2.086.** -25 pro $a>0$; 25 pro $a<0$ **2.087.** $-\sqrt{ac}$ **2.088.** $\sqrt{1+x}$ **2.089.** 2 **2.090.** 3 **2.091.** $(x^{1/3}+y^{1/3})/\sqrt[6]{x^5y^2}$ **2.092.** $1/(x^2-1)$ **2.093.** $2\sqrt{3}$ **2.094.** 0 **2.095.** $z^{1/(p-3)}$ **2.096.** $\frac{a^2}{4(a^2-x)}$ **2.097.** 2 **2.098.** 1 **2.099.** -1 **2.100.** $z(z+1)(z+2)$ **2.101.** $-\sqrt{2}/(2a)$ **2.102.** $1-a$ pro $a\in(-\infty;-1)$; $a-1$ pro $a\in(-1;0)\bigcup(0;1)\bigcup(1;\infty)$ **2.103.** $a/2$ **2.104.** $(a+b)\sqrt[3]{b^2+2a^3}$ **2.105.** -1 **2.106.** $29/35$ **2.107.** $\frac{a^3}{2(a-1)}$ **2.108.** $-7/24$ **2.109.** 100 **2.110.** $1/3$ **2.111.** $1/(ab)$