

$$\begin{aligned} \boxed{7.12} \quad \frac{\sqrt{210} \cdot \sqrt{28}}{\sqrt{0,3}} &= \sqrt{\frac{210 \cdot 28}{0,3}} = \sqrt{\frac{210 \cdot 28 \cdot 10}{3}} = \\ &= \sqrt{40 \cdot 28 \cdot 10} = \sqrt{7 \cdot 10 \cdot 7 \cdot 4 \cdot 10} = \sqrt{4^2 \cdot 10^2 \cdot 2^2} = \\ \sqrt{4} &= 2 \qquad \qquad \qquad = 7 \cdot 10 \cdot 2 = 140 \end{aligned}$$

$$\begin{aligned} \boxed{7.13} \quad 0,65 \cdot \sqrt[5]{625} \cdot \sqrt[20]{625} &= 0,65 \cdot 625^{\frac{1}{5}} \cdot 625^{\frac{1}{20}} = \\ &= 0,65 \cdot 625^{\frac{1}{5} + \frac{1}{20}} = 0,65 \cdot 625^{\frac{5}{20}} = 0,65 \cdot 625^{\frac{1}{4}} = \\ &= 0,65 \cdot (5^4)^{\frac{1}{4}} = 0,65 \cdot 5 = 3,25 \end{aligned}$$

$$\begin{aligned} \boxed{7.14} \quad \sqrt[5]{8 - \sqrt{37}} \cdot \sqrt[5]{8 + \sqrt{37}} \cdot \sqrt[5]{9} &= \\ &= \sqrt[5]{(8 - \sqrt{37})(8 + \sqrt{37}) \cdot 9} = \sqrt[5]{(8^2 - (\sqrt{37})^2) \cdot 9} = \\ &= \sqrt[5]{(64 - 37) \cdot 9} = \sqrt[5]{27 \cdot 9} = \sqrt[5]{3^3 \cdot 3^2} = \sqrt[5]{3^5} = 3 \end{aligned}$$

$$\boxed{7.15} \quad \frac{\sqrt{6+4\sqrt{2}}}{(a+b)^2} + \frac{\sqrt{6-4\sqrt{2}}}{(a-b)^2} = \sqrt{(2+\sqrt{2})^2} + \sqrt{(2-\sqrt{2})^2} \quad \ominus$$

$$6 + 4\sqrt{2} = (a+b)^2 = a^2 + 2ab + b^2 \quad \begin{cases} 2ab = 4\sqrt{2} = 2 \cdot 2\sqrt{2} \\ a^2 + b^2 = 6 \end{cases}$$

$$\begin{aligned} 1) a=2, b=\sqrt{2} \quad a^2+b^2 &= 2^2 + (\sqrt{2})^2 = 4+2=6 \quad \oplus \\ 2) a=1, b=2\sqrt{2} \quad a^2+b^2 &= 1^2 + (2\sqrt{2})^2 = 1+8=9 \quad \ominus \end{aligned}$$

$$\ominus \quad \underbrace{|2+\sqrt{2}|}_{>0} + \underbrace{|2-\sqrt{2}|}_{>0} = 2+\sqrt{2} + 2-\sqrt{2} = 4 - \text{ответ}$$

$$|a| = \begin{cases} a, & a > 0 \\ 0, & a = 0 \\ -a, & a < 0 \end{cases} = \begin{cases} a, & a \geq 0 \\ -a, & a < 0 \end{cases}$$

$$\sqrt{2} \approx 1,4$$

$$|-3| = -(-3) = 3$$

$$3) a=\sqrt{2}, b=2$$

$$\dots = \sqrt{(\sqrt{2}+2)^2} + \sqrt{(\sqrt{2}-2)^2} = \underbrace{|\sqrt{2}+2|}_{>0} + \underbrace{|\sqrt{2}-2|}_{<0} =$$

$$= \sqrt{2}+2 - (\sqrt{2}-2) = \sqrt{2}+2-\sqrt{2}+2=4$$

$$(2+\sqrt{2})^2 = 2^2 + 2 \cdot 2 \cdot \sqrt{2} + \sqrt{2}^2 = 4 + 4\sqrt{2} + 2 = 6 + 4\sqrt{2}$$

$$\sqrt[4]{a^4} = |a| \quad \sqrt[5]{a^5} = a$$

$$\boxed{7.16} \quad \left(\sqrt{3 \frac{3}{5}} - \sqrt{6 \frac{2}{5}} \right) : \sqrt{\frac{2}{45}} = \left(\sqrt{\frac{18}{5}} - \sqrt{\frac{32}{5}} \right) : \sqrt{\frac{2}{45}} =$$

$$= \left(\frac{\sqrt{18}}{\sqrt{5}} - \frac{\sqrt{32}}{\sqrt{5}} \right) : \frac{\sqrt{2}}{\sqrt{45}} = \frac{\sqrt{18} - \sqrt{32}}{\sqrt{5}} \cdot \frac{\sqrt{45}}{\sqrt{2}} =$$

$$= \frac{\sqrt{45}}{\sqrt{5}} \cdot \frac{\sqrt{18} - \sqrt{32}}{\sqrt{2}} = \sqrt{\frac{45}{5}} \cdot \left(\frac{\sqrt{18}}{\sqrt{2}} - \frac{\sqrt{32}}{\sqrt{2}} \right) =$$

$$= \sqrt{9} \cdot \left(\sqrt{\frac{18}{2}} - \sqrt{\frac{32}{2}} \right) = 3 \cdot (3 - 4) = -3$$

$$\boxed{7.17} \quad \sqrt{5} \cdot \sqrt{20-\sqrt{15}} \cdot \sqrt{20+\sqrt{15}} \cdot \sqrt{77} \quad 385$$

$$\boxed{7.18} \quad \sqrt{x^2-4x+4} + \sqrt{x^2-8x+16}, \quad x = \sqrt{7} \quad 2$$

Решение 7.17

$$\begin{aligned} \dots &= \sqrt{5 \cdot (20-\sqrt{15})(20+\sqrt{15}) \cdot 77} = \sqrt{5(20^2 - (\sqrt{15})^2) \cdot 77} = \sqrt{5 \cdot 385 \cdot 77} = \\ &= \sqrt{5 \cdot \underbrace{5 \cdot 77 \cdot 77}_{385}} = \sqrt{5^2 \cdot 77^2} = 5 \cdot 77 = 385 \end{aligned}$$

Решение 7.18

$$\dots = \sqrt{(x-2)^2} + \sqrt{(x-4)^2} = |x-2| + |x-4| = \underbrace{|\sqrt{7}-2|}_{>0} + \underbrace{|\sqrt{7}-4|}_{<0} \quad \ominus$$

$$2 < \sqrt{7} < 3 \quad \approx 2,6$$

$$\ominus \quad \sqrt{7}-2 - (\sqrt{7}-4) = \sqrt{7}-2-\sqrt{7}+4 = 2$$