

$$\begin{aligned} \frac{11 + \sqrt{21}}{11 - \sqrt{21}} + \frac{11 - \sqrt{21}}{11 + \sqrt{21}} &= \frac{(11 + \sqrt{21})(11 + \sqrt{21}) + (11 - \sqrt{21})(11 - \sqrt{21})}{(11 - \sqrt{21})(11 + \sqrt{21})} = \\ &= \frac{(11 + \sqrt{21})^2 + (11 - \sqrt{21})^2}{11^2 - \sqrt{21}^2} = \frac{121 + 22\sqrt{21} + 21 + 121 - 22\sqrt{21} + 21}{121 - 21} = \frac{284}{100} \\ &= 2,84 \end{aligned}$$

$$\frac{5}{3 + 2\sqrt{2}} + \frac{5}{3 - 2\sqrt{2}} = \frac{5(3 - 2\sqrt{2}) + 5(3 + 2\sqrt{2})}{(3 + 2\sqrt{2})(3 - 2\sqrt{2})} = \frac{15 - 10\sqrt{2} + 15 + 10\sqrt{2}}{9 - 8} = 30$$

$$\sqrt[4]{4 + \sqrt{15}} \cdot \sqrt[4]{4 - \sqrt{15}} = \sqrt[4]{(4 + \sqrt{15})(4 - \sqrt{15})} = \sqrt[4]{4^2 - 15} = \sqrt[4]{16 - 15} = 1$$

$$(3\sqrt{5} + \sqrt{15})^2 - 10\sqrt{27} = 45 + 6\sqrt{75} + 15 - 10\sqrt{27} = 45 + 6 * 5\sqrt{3} + 15 - 10 * 3\sqrt{3} = 60$$

$$\sqrt{6 - \sqrt{20}} = \sqrt{\frac{6 + \sqrt{36 - 20}}{2}} - \sqrt{\frac{6 - \sqrt{36 - 20}}{2}} = \sqrt{\frac{10}{2}} - \sqrt{\frac{2}{2}} = \sqrt{5} - 1$$

$$\sqrt{6 + 3\sqrt{3}} = \sqrt{\frac{6 + \sqrt{36 - 27}}{2}} + \sqrt{\frac{6 - \sqrt{36 - 27}}{2}} = \sqrt{\frac{9}{2}} + \sqrt{\frac{3}{2}} = \sqrt{4,5} + \sqrt{1,5}$$

$$\sqrt{8 + \sqrt{28}} = \sqrt{\frac{8 + \sqrt{64 - 28}}{2}} + \sqrt{\frac{8 - \sqrt{64 - 28}}{2}} = \sqrt{\frac{14}{2}} + \sqrt{\frac{2}{2}} = \sqrt{7} + 1$$

$$\sqrt{11 - 2\sqrt{10}} = \sqrt{\frac{11 + \sqrt{121 - 40}}{2}} - \sqrt{\frac{11 - \sqrt{121 - 40}}{2}} = \sqrt{\frac{20}{2}} - \sqrt{\frac{2}{2}} = \sqrt{10} - 1$$