

$$\begin{aligned}
& \frac{\sqrt{3+\sqrt{5}}}{\sqrt[3]{(4\sqrt{2}-2\sqrt{10})^2}} = \frac{\sqrt{3+\sqrt{5}}\sqrt[3]{4\sqrt{2}-2\sqrt{10}}}{4\sqrt{2}-2\sqrt{10}} = \\
& = \frac{\sqrt{3+\sqrt{5}}\sqrt[3]{4\sqrt{2}-2\sqrt{10}}(4\sqrt{2}+2\sqrt{10})}{32-40} = \\
& = -\frac{\sqrt[6]{(3+\sqrt{5})^3(4\sqrt{2}-2\sqrt{10})^2} \cdot 2 \cdot \sqrt{2}(2-\sqrt{5})}{8} = \\
& = -\frac{\sqrt[6]{8(3+\sqrt{5})^3(2-\sqrt{5})^2(2-\sqrt{5})\sqrt{2}}}{4} = \\
& = -\frac{\sqrt[6]{64(9+4\sqrt{5})(9-4\sqrt{5})(2-\sqrt{5})\sqrt{2}}}{4} = \frac{\sqrt{2}}{2}(\sqrt{5}-2).
\end{aligned}$$

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