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Formula radicalilor compuşi:

$$\sqrt{A+\sqrt{B}} = \sqrt{\frac{A+\sqrt{A^2-B}}{2}} + \sqrt{\frac{A-\sqrt{A^2-B}}{2}}$$

$$\sqrt{A-\sqrt{B}} = \sqrt{\frac{A+\sqrt{A^2-B}}{2}} - \sqrt{\frac{A-\sqrt{A^2-B}}{2}}$$

$$\sqrt{3+\sqrt{5}} = \sqrt{\frac{3+\sqrt{3^2-5}}{2}} + \sqrt{\frac{3-\sqrt{3^2-5}}{2}} = \sqrt{\frac{3+\sqrt{9-5}}{2}} + \sqrt{\frac{3-\sqrt{9-5}}{2}} = \sqrt{\frac{3+\sqrt{4}}{2}} + \sqrt{\frac{3-\sqrt{4}}{2}} =$$

$$= \sqrt{\frac{3+2}{2}} + \sqrt{\frac{3-2}{2}} = \frac{\sqrt{5}+1}{\sqrt{2}}$$

$$\sqrt{3-\sqrt{5}} = \sqrt{\frac{3+\sqrt{3^2-5}}{2}} - \sqrt{\frac{3-\sqrt{3^2-5}}{2}} = \sqrt{\frac{3+\sqrt{9-5}}{2}} - \sqrt{\frac{3-\sqrt{9-5}}{2}} = \sqrt{\frac{3+\sqrt{4}}{2}} - \sqrt{\frac{3-\sqrt{4}}{2}} =$$

$$= \sqrt{\frac{3+2}{2}} - \sqrt{\frac{3-2}{2}} = \frac{\sqrt{5}-1}{\sqrt{2}}$$

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Calculaţi radicalii:

$$\sqrt{6 \pm 2\sqrt{5}} = \sqrt{\frac{6 + \sqrt{36 - 20}}{2}} \pm \sqrt{\frac{6 - \sqrt{36 - 20}}{2}} = \sqrt{\frac{6 + 4}{2}} \pm \sqrt{\frac{6 - 4}{2}} = \sqrt{5} \pm 1$$

$$\sqrt{9 \pm 4\sqrt{5}} = \sqrt{\frac{9 + \sqrt{81 - 80}}{2}} \pm \sqrt{\frac{9 - \sqrt{81 - 80}}{2}} = \sqrt{\frac{9 + 1}{2}} \pm \sqrt{\frac{9 - 1}{2}} = \sqrt{5} \pm 2$$

$$\sqrt{14 \pm 6\sqrt{5}} = \sqrt{\frac{14 + \sqrt{196 - 180}}{2}} \pm \sqrt{\frac{14 - \sqrt{196 - 180}}{2}} = \sqrt{\frac{14 + 4}{2}} \pm \sqrt{\frac{14 - 4}{2}} = 3 \pm \sqrt{5}$$

Demonstraţi că:

$$\sqrt{26+6\sqrt{13-4\sqrt{8+2\sqrt{6-2\sqrt{5}}}}} + \sqrt{26-6\sqrt{13+4\sqrt{8-2\sqrt{6+2\sqrt{5}}}}} \in Q$$

$$\sqrt{26+6\sqrt{13-4\sqrt{8+2\sqrt{6-2\sqrt{5}}}}} + \sqrt{26-6\sqrt{13+4\sqrt{8-2\sqrt{6+2\sqrt{5}}}}} =$$

$$=\sqrt{26+6\sqrt{13-4\sqrt{8+2\sqrt{5}-2}}} + \sqrt{26-6\sqrt{13+4\sqrt{8-2\sqrt{5}-2}}} =$$

$$=\sqrt{26+6\sqrt{13-4\sqrt{6+2\sqrt{5}}}} + \sqrt{26-6\sqrt{13+4\sqrt{6-2\sqrt{5}}}} =$$

$$=\sqrt{26+6\sqrt{13-4\sqrt{5}-4}} + \sqrt{26-6\sqrt{13+4\sqrt{5}-4}} =$$

$$=\sqrt{26+6\sqrt{9-4\sqrt{5}}} + \sqrt{26-6\sqrt{9+4\sqrt{5}}} =$$

$$=\sqrt{26+6\sqrt{5}-12} + \sqrt{26-6\sqrt{5}-12} =$$

$$=\sqrt{14+6\sqrt{5}} + \sqrt{14-6\sqrt{5}} =$$

$$=3+\sqrt{5}+3-\sqrt{5} =$$

$$=6$$