

احسب:

$$\begin{aligned}
 a &= \sqrt{2 - \sqrt{2 + \sqrt{2}}} \times \sqrt{2 + \sqrt{2 + \sqrt{2}}} \times \sqrt{2 + \sqrt{2}} \times \sqrt{2} \\
 &= \sqrt{(2 - \sqrt{2 + \sqrt{2}})(2 + \sqrt{2 + \sqrt{2}})} \times \sqrt{2 + \sqrt{2}} \times \sqrt{2} \\
 &= \sqrt{2^2 - (\sqrt{2 + \sqrt{2}})^2} \times \sqrt{2 + \sqrt{2}} \times \sqrt{2} \\
 &= \sqrt{4 - (2 + \sqrt{2})} \times \sqrt{2 + \sqrt{2}} \times \sqrt{2} \\
 &= \sqrt{4 - 2 - \sqrt{2}} \times \sqrt{2 + \sqrt{2}} \times \sqrt{2} \\
 &= \sqrt{2 - \sqrt{2}} \times \sqrt{2 + \sqrt{2}} \times \sqrt{2} \\
 &= \sqrt{(2 - \sqrt{2})(2 + \sqrt{2})} \times \sqrt{2} \\
 &= \sqrt{2^2 - \sqrt{2}^2} \times \sqrt{2} \\
 &= \sqrt{4 - 2} \times \sqrt{2} \\
 &= \sqrt{2} \times \sqrt{2} \\
 &= \sqrt{2^2} \\
 &\boxed{a = 2}
 \end{aligned}$$

أرسله الاستاذ سفيان الزياتي