

$$(a^2 + b^2 - 2ab)^2 = (a-b)^4$$

$$(a^2 + b^2 + 2ab)^2 = (a+b)^4 \rightarrow (a^2 - b^2)^2$$

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

$$2^2 - 1 - 1\sqrt{12} = 32 - 14\sqrt{3} = 14(2 - \sqrt{3}) \rightarrow \boxed{t=14}$$