

Proposed problem

Dear Editor/s, I would like to submit the following problem

Let T_n be a sequence defined by $T_1 = a$,

$$T_{n+1} = \frac{T_n^2}{2\sqrt{1+T_n^2}}, \quad n \geq 1$$

Evaluate $\prod_{n=1}^{\infty} \frac{2+T_n^2}{2T_n^2+2}$