
Yet another discovery

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1 A simple equation with an amazingly simpler proof

Prove :

$$2 = \sqrt{2}^{\sqrt{2}^{\sqrt{2}^{\sqrt{2}^{\sqrt{2}^{\sqrt{2}^{\dots}}}}}}^2 \tag{1}$$

Proof:

$$2 = \sqrt{2} * \sqrt{2} \tag{2}$$

$$= \sqrt{2}^2 \tag{3}$$

Replace the 2 in the exponent on the right hand side, by the definition of 2 of the lhs. If we start from the two topmost exponents and work downwards.

We get $2 = \sqrt{2}^{\sqrt{2}^2}$

Keep repeating the above step, to get

$$2 = \sqrt{2}^{\sqrt{2}^{\sqrt{2}^{\sqrt{2}^{\sqrt{2}^{\sqrt{2}^{\dots}}}}}}^2$$

Q E D

Maths can be so tantalising, at times.
