۴- $t = \sqrt{x-1}$

$\Rightarrow x = t^2 + 1 \to t \geq 0$

$$\sqrt{t^2+2}\left(\frac{1}{t+2} - \frac{1}{2-t}\right) = t$$

$$\sqrt{t^2+2} \cdot \frac{1-2t}{(t+2)(2-t)} = t$$

۵- $x \leq 2 \quad , \quad 0 \leq s \quad s = \sqrt{2-x}$

۶

$$\frac{1}{x^2} + \frac{1}{(1-x)^2} = \frac{19}{9}$$

$$x = \frac{1}{4}, \frac{3}{4}, \frac{1}{2} \pm \frac{\sqrt{33}}{10}$$

$$1 + \frac{3}{2} + \left(\frac{1}{2} - \frac{\sqrt{33}}{10}\right) + \left(\frac{1}{2} + \frac{\sqrt{33}}{10}\right) = 4$$

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-۱

$$\frac{L_0}{\omega} = \frac{\omega}{۴}$$

$$\rho = \frac{۱+\sqrt{۵}}{۲}$$

$$= \frac{L_1\omega}{L_0\omega} = \frac{L_1}{L_0} = \frac{\rho}{\omega,۴} = \frac{۴\rho}{۵}$$

$$\frac{۴\rho}{۵} = \frac{۲(۱+\sqrt{۵})}{۵} = \frac{۲+۲\sqrt{۵}}{۵} \quad \left\{ \rho = \frac{۱+\sqrt{۵}}{۲} \right.$$

$$\rho = \sqrt{\frac{L^۲+\omega^۲}{L}} = \rho \qquad -۲$$

$$\sqrt{۱+\frac{۱}{k^۲}} = \rho \Rightarrow ۱+\frac{۱}{k^۲} = \rho^۲$$

$$k^۲ = \frac{۱}{\rho} = \rho - ۱ = \frac{\sqrt{۵}-۱}{۲}$$

$$\left(\frac{L}{\omega}\right)^۲ = \frac{\sqrt{۵}-۱}{۲}$$

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