$$P(x) = x^3 - 2x^2 - \frac{(1+\lambda)}{\lambda}x + \frac{1}{\lambda^3} - \frac{1}{\lambda} = 0. \qquad (7)$$

We know that $P(x)$ has $x_e = \frac{\lambda-1}{\lambda}$ as a root (x_e is a fixed point of m, and therefore also of m^2). Dividing out the factor $(x - x_e) = \left(x - \frac{\lambda-1}{\lambda}\right)$ gives

$$\frac{P(x)}{\left(x - \frac{\lambda-1}{\lambda}\right)} = x^2 - x\left(\frac{\lambda+1}{\lambda}\right) + \frac{\lambda+1}{\lambda^2} = Q(x). \qquad (7)$$

The equation $Q(x) = 0$ has the solutions

$$\boxed{x^{\pm} = \frac{\lambda+1}{2\lambda} \pm \frac{1}{2\lambda}\sqrt{(\lambda-3)(\lambda+1)}}\,. \qquad (8)$$

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Note that $x^{\pm}\Big|_{\lambda=3} = \frac{3+1}{6} = \frac{4}{6} \approx \frac{2}{3} = \frac{\lambda-1}{\lambda}\Big|_{\lambda=3} = x_e\Big|_{\lambda=3}$.

Note also that $\frac{\partial x^{\pm}}{\partial \lambda}\Big|_{\lambda=3} = \pm\infty$. Thus, the slope of the curves $x^{\pm}(\lambda)$ are ∞ at $\lambda = 3$.

Evaluating at $\lambda = 3.449$ gives

$$x^+ - x^- = \frac{1}{\lambda}\sqrt{(\lambda-3)(\lambda+1)}\Big|_{\lambda=3.449} = .409\ldots$$