LÖSUNG ZU 6f:

$x^4 - \frac{1}{100} = 0$ /Anwendung der binomischen Formel

$x^4 - \frac{1}{100} = (x^2 - \frac{1}{10})\ (x^2 + \frac{1}{10}) = 0$ /Anwendung des Produkt-Null-Satzes

↓ ↓

$x^2 - \frac{1}{10} = 0$ $x^2 + \frac{1}{10} = 0$

$x_1^2 = \frac{1}{10}$ $x_2^2 = -\frac{1}{10}$

$x_{1,2} = \pm\sqrt{\frac{1}{10}}$ $x_{3,4} = \pm\sqrt{-\frac{1}{10}}$

$x_{1,2} = \pm\sqrt{\frac{10}{100}}$ $x_{3,4} = \pm\sqrt{-\frac{10}{100}}$

↓ ↓

$x_1 = \sqrt{\frac{10}{100}} = \frac{\sqrt{10}}{10}$ Keine Lösung in $\mathbb{R}$

$x_2 = -\sqrt{\frac{10}{100}} = \frac{-\sqrt{10}}{10}$;

$L = \{\frac{-\sqrt{10}}{10}; \frac{\sqrt{10}}{10}\}$