

### Aufgabe 1.34

Lösen Sie die Gleichungen a)  $8x^2 - 14x = 9$ , b)  $x^4 - \frac{7}{4}x^2 - \frac{9}{8} = 0$ !

#### Lösung:

$$\begin{aligned} \text{a) } 8x^2 - 14x &= 9 \\ 8x^2 - 14x - 9 &= 0 \end{aligned}$$

$$x^2 - \frac{14}{8}x - \frac{9}{8} = 0, \quad x_{1/2} = \frac{7}{8} \pm \sqrt{\frac{49}{64} + \frac{72}{64}} = \frac{7}{8} \pm \frac{11}{8} = \begin{cases} \frac{18}{8} \\ -\frac{4}{8} \end{cases} = \begin{cases} \frac{9}{4} \\ -\frac{1}{2} \end{cases}$$

$$\text{b) } (x^2)^2 - \frac{7}{4}x^2 - \frac{9}{8} = 0, \quad x_{1/2}^2 = \frac{7}{8} \pm \sqrt{\frac{49}{64} + \frac{72}{64}} = \begin{cases} 9/4, & x_{1/2} = \pm 3/2 \\ -1/2, & x_{3/4} \text{ komplex} \end{cases}$$