

Lösung Beispiel 311d)

$$(2x - 3) \cdot (x + 1) = (3x - 4)^2 - x^2 + 18x - 23$$

| ausmultiplizieren

$$2x^2 + 2x - 3x - 3 = 9x^2 - 24x + 16 - x^2 + 18x - 23$$

| zusammenfassen

$$2x^2 - x - 3 = 8x^2 - 6x - 7 \quad | - 2x^2$$

$$-x - 3 = 6x^2 - 6x - 7 \quad | + x$$

$$-3 = 6x^2 - 5x - 7 \quad | + 3$$

$$0 = 6x^2 - 5x - 4 \quad | : 6$$

$$0 = x^2 - \frac{5}{6}x - \frac{4}{6}$$

$$x_{1,2} = -\frac{p}{2} \pm \sqrt{\left(\frac{p}{2}\right)^2 - q} \quad p = -\frac{5}{6} \quad q = -\frac{4}{6}$$

$$x_{1,2} = \frac{5}{12} \pm \sqrt{\left(\frac{\frac{5}{6}}{2}\right)^2 + \frac{4}{6}}$$

$$x_{1,2} = \frac{5}{12} \pm \sqrt{\frac{25}{144} + \frac{4}{6}}$$

$$x_{1,2} = \frac{5}{12} \pm \sqrt{\frac{121}{144}}$$

$$x_{1,2} = \frac{5}{12} \pm \frac{11}{12}$$

$$x_1 = \frac{16}{12} = \frac{4}{3} \quad x_2 = -\frac{6}{12} = -\frac{1}{2}$$

Lösung: (1) {} (2) {} (3) $\{-\frac{1}{2}, \frac{4}{3}\}$

