

$$\begin{array}{l}
 1 \quad (x+1)(x+7) = (x+2)(x+3) \quad \left| \text{Klammern ausrechnen} \right. \\
 \quad \quad x^2 + 8x + 7 = x^2 + 5x + 6 \quad \left| -x^2 - 5x - 7 \right. \\
 \quad \quad \quad 3x = -1 \quad \left| : 3 \right. \\
 \quad \quad \quad \quad \mathbf{x = -\frac{1}{3}}
 \end{array}$$

$$\begin{array}{l}
 2 \quad 2(x+2)(x+5) = (2x+7)(x+3) \\
 \quad 2(x^2 + 7x + 10) = 2x^2 + 6x + 7x + 21 \\
 \quad 2x^2 + 14x + 20 = 2x^2 + 13x + 21 \quad \left| -2x^2 - 13x - 20 \right. \\
 \quad \quad \quad \quad \mathbf{x = 1}
 \end{array}$$

$$\begin{array}{l}
 3 \quad 2x^2 - (x+3)(x-3) = (x+1)^2 \\
 \quad 2x^2 - (x^2 - 9) = x^2 + 2x + 1 \\
 \quad 2x^2 - x^2 + 9 = x^2 + 2x + 1 \\
 \quad \quad x^2 + 9 = x^2 + 2x + 1 \quad \left| -x^2 - 1 \right. \\
 \quad \quad \quad 8 = 2x \quad \left| : 2 \right. \\
 \quad \quad \quad \quad \mathbf{4 = x}
 \end{array}$$

$$\begin{array}{l}
 4 \quad (x+3)(x-5) = (x-3)^2 \\
 \quad x^2 - 2x - 15 = x^2 - 6x + 9 \quad \left| -x^2 + 15 + 6x \right. \\
 \quad \quad 4x = 24 \quad \left| : 4 \right. \\
 \quad \quad \quad \quad \mathbf{x = 6}
 \end{array}$$

$$\begin{array}{l}
 5 \quad (2x-3)^2 - (x-5)^2 - 3x(x-7) + 17 = 0 \\
 \quad 4x^2 - 12x + 9 - (x^2 - 10x + 25) - 3x^2 + 21x + 17 = 0 \\
 \quad 4x^2 - 12x + 9 - x^2 + 10x - 25 - 3x^2 + 21x + 17 = 0 \\
 \quad \quad \quad \quad 19x + 1 = 0 \quad \left| -1 \right. \\
 \quad \quad \quad \quad 19x = -1 \quad \left| : 19 \right. \\
 \quad \quad \quad \quad \quad \mathbf{x = -\frac{1}{19}}
 \end{array}$$

$$\begin{array}{l}
 6 \quad 5x(x-1) - (2x+3)^2 - (x-5)(x+3) - 6 = 0 \\
 \quad 5x^2 - 5x - (4x^2 + 12x + 9) - (x^2 - 2x - 15) - 6 = 0 \\
 \quad 5x^2 - 5x - 4x^2 - 12x - 9 - x^2 + 2x + 15 - 6 = 0 \\
 \quad \quad \quad \quad -15x = 0 \quad \left| : (-15) \right. \\
 \quad \quad \quad \quad \quad \mathbf{x = 0}
 \end{array}$$