

**Aufgabe 1.1**

$$x^2 = 4.41$$

$$L = \{2.1, -2.1\}$$

**Aufgabe 1.2**

$$x^2 = 19$$

$$L = \{\sqrt{19}, -\sqrt{19}\}$$

**Aufgabe 1.3**

$$x^2 + 36 = 0$$

$$x^2 = -36$$

$$L = \{ \}$$

**Aufgabe 1.4**

$$50x^2 = 8$$

$$x^2 = \frac{8}{50} = \frac{4}{25}$$

$$L = \left\{ \frac{2}{5}, -\frac{2}{5} \right\}$$

**Aufgabe 1.5**

$$0.3x^2 - 3.6 = 0$$

$$0.3x^2 = 3.6$$

$$x^2 = 12$$

$$L = \{2\sqrt{3}, -2\sqrt{3}\}$$

**Aufgabe 1.6**

$$4x^2 + 8 = 6x^2 - 90$$

$$98 = 2x^2$$

$$49 = x^2$$

$$L = \{-7, 7\}$$

### Aufgabe 1.7

$$\frac{1}{x^2} = \frac{9}{7}$$

$$x^2 = \frac{7}{9}$$

$$L = \left\{ -\frac{\sqrt{7}}{3}, \frac{\sqrt{7}}{3} \right\}$$

### Aufgabe 1.8

$$\frac{1}{6}x^2 + \frac{1}{4} = \frac{1}{2} - \frac{1}{3}x^2 \quad || \cdot 12$$

$$2x^2 + 3 = 6 - 4x^2$$

$$6x^2 = 3$$

$$x^2 = \frac{1}{2}$$

$$L = \left\{ \frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2} \right\}$$

### Aufgabe 1.9

$$(2x - 3)^2 = (3x - 2)^2$$

$$4x^2 - 12x + 9 = 9x^2 - 12x + 4$$

$$5 = 5x^2$$

$$x^2 = 1$$

$$L = \{-1, 1\}$$

oder eleganter ( $A^2 = B^2 \Rightarrow A = \pm B$ ):

$$(2x - 3)^2 = (3x - 2)^2$$

$$2x - 3 = 3x - 2$$

$$-x = 1$$

$$x = -1$$

$$2x - 3 = -(3x - 2) = -3x + 2$$

$$5x = 5$$

$$x = 1$$

### Aufgabe 1.10

$$(2x - 1)(2x + 6) = (x + 1)(3x + 7)$$

$$4x^2 + 10x - 6 = 3x^2 + 10x + 7$$

$$x^2 = 13$$

$$L = \{\sqrt{13}, -\sqrt{13}\}$$