**Wurzelgleichungen I**

Löse zuerst folgende Wurzelgleichungen. Finde den Begriff, indem du die Buchstaben den Lösungen zuordnest und danach die Reihenfolge der Buchstaben zusammenpuzzelst.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **-10** | **-9** | **-8** | **-7** | **-6** | **-5** | **-4** | **-3** | **-2** | **-1** |
| **F** | **D** | **A** | **K** | **M** | **E** | **S** | **N** | **C** | **L** |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |
| **B** | **I** | **U** | **-** | **E** | **T** | **H** | **G** | **R** | **B** |

$\sqrt{1,4 + 3,82x }$ = $\sqrt{-17,7 }$ |² 3,82x + 1,4 $\geq $ 0

1,4 + 3,82x = - 17,7 |-1,4 x $\geq $ $-\frac{140}{382}= -\frac{70}{191}$

**3,82x = -19,1 |:3,82** **D = R\{x|x** $\geq $$-\frac{70}{191}$**}**

 **x = -5**  **L = {-5} E**

 $\sqrt{9,8+ 4,9x }$ = $\sqrt{4,9 }$ |² 9,8 – 4,9x $\geq $ 0

**9,8 + 4,9 x = 4,9 |-9,8 x** $\leq $ **2**

 **4,9x = -4,9 |:4,9 D = R\{x|x** $\leq $ **2 }**

 **x = -1 L = {-1} L**

$\sqrt{8,9x-7,5 }$ = $\sqrt{10,3 }$ |² 8,9x – 7,5 $\geq $ 0

**8,9x – 7,5 = 10,3 |+7,5 x** $\geq $ $\frac{75}{89}$

 **8,9x = 17,8 |:8,9 D = R\{x|x** $\geq $$\frac{75}{89}$**}**

 **x = 2 L = {2} I**

 $\sqrt{8,9-0,31x }$ = $\sqrt{10,14 }$ |² 8,9 – 0,31x $\geq $ 0

**8,9 – 0,31 x = 10,14 |-8,9 x** $\leq $$\frac{890}{31}=28\frac{22}{31}$

 **-0,31x = 1,24 |:(-0,31) D = R\{x|x** $\leq 28\frac{22}{31}$**}**

 **x = -4 L = {-4} S**

 $\sqrt{4-2x }$ = $\sqrt{20 }$ |² 4 – 2x $\geq $ 0

**4 – 2 x = 20 |-4 x** $\leq $ **2**

 **-2x = 16 |:(-0,31) D = R\{x|x**$ $$\leq $ **2}**

 **x = -8 L = {-8} A**

$\sqrt{4-0,73x }$ = $\sqrt{3,27 }$ |² 4 – 0,73x $\geq $ 0

**4 – 0,73x = 3,27 |-4 x** $\leq $$\frac{400}{73}=5\frac{35}{73}$

 **– 0,73x = -0,73 |:(-0,73) D = R\{x|x**$ $$\leq $$5\frac{35}{73}$**}**

 **x = 1 L = {1} B**

 $\sqrt{9,51x+1 }$ = $\sqrt{48,55 }$ |² **9,51x – 1** $\geq $ 0

**9,51x + 1 = 48,55 |-1 x** $\geq $ $\frac{100}{951}$

 **9,51x = 47,55 |:9,51 D = R\{x|x** $\geq $$\frac{100}{951}$**}**

 **x = 5 L = {5} E**

 $\sqrt{-0,3+9,53x }$ = $\sqrt{57,48 }$ |² -0,3 + 9,53x $\geq $ 0

-0,3 + 9,53x = 57,48 | -0,3 **x** $\geq $ $\frac{30}{953}$

 **9,53x = 57,18 |:9,53 D = R\{x|x** $\geq $ $\frac{30}{953}$}

 **x = 6 L = {6} T**

$\sqrt{10-9x }$ = $\sqrt{53 }$ |² 10 + 9x $\geq $ 0

10 - 9x = 53 |+10 x $\geq \frac{10}{9}$

 9x = 63 |:9 **D = R\{x|x** $\geq $ $\frac{10}{9}$}

 x = 7 **L = {7} H**

**Rechenweg wie vorher**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **E** | **L** | **I** | **S** | **A** | **B** | **E** | **T** | **H** |