**Gleichungen mit Logarithmen I**

Benutze die Logarithmen Gesetze und den Taschenrechner. Bestimme das Ergebnis. Runde auf höchstens zwei Dezimalen.

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| a) 7 · 5x = 14 |:7  5x = 2 |log  x·log5 = log2 |: log5  x ≈ 0,43  L = {0,43} | b) 10 + 3 · 6x = 46 |-10  3 · 6x = 36 |:3  6x = 12 |log  x·log6 = log12 |:log6  x ≈ 1,39  L = {1,39} |
| c) 3 · 54x-5 = 15 |:3  54x-5 = 5 |log  (4x-5)·log5 = log5 |: log5  4x-5 = 1 |+5  4x = 6 |:4  x = 1,5  L = {1,5} | d) 102x+1 – 5³ = 100 |+125  102x+1 = 225 |log  (2x+1)· log10 = log 225 |:log10  2x + 1 ≈ 2,35 |-1  2x = 1,35 |:2  x = 0,68  L = {0,68} |
| e) 32x+1 = 2x+5 |log  (2x+1)·log3 = (x+5)·log2 |Überkreuzverfahren  |T  |·(x+5)  2x + 1 = 0,63x + 3,15 |-0,63x-1  1,37x = 2,15 |:1,37  x ≈ 1,57  L = {1,57} | |
| f) (3 + 23x+3)² - 4 = 25 |+4   1. + 23x+3)² = 36 |√   1. Fall 3 + 23x+3 = 6 |-3  23x+3 = 3 |log  (3x+3)log2 = log3 |:log2  3x + 3 ≈ 1,58 |-3  3x = -1,42 |:3  **x ≈ -0,47**  2. Fall 3 + 23x+3 = -6 |-3  23x+3 = -3 |log  log (-3) nicht lösbar  L = {-0,47} | |