**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 ≈ 0,43L = {0,43} | b) 10 + 3 · 6x = 46 |-10 3 · 6x = 36 |:3 6x = 12 |log x·log6 = log12 |:log6 x ≈ 1,39L = {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 = 1,5L = {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 = 0,68L = {0,68} |
| e) 32x+1 = 2x+5 |log(2x+1)·log3 = (x+5)·log2 |Überkreuzverfahren $\frac{2x+1}{x+5}= \frac{log2}{log3}$ |T $\frac{2x+1}{x+5}≈ 0,63$ |·(x+5)  2x + 1 = 0,63x + 3,15 |-0,63x-1 1,37x = 2,15 |:1,37 x ≈ 1,57L = {1,57} |
| f) (3 + 23x+3)² - 4 = 25 |+41. + 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 lösbarL = {-0,47} |