



## **1. Gleichungen (mit und ohne Parameter)**

Löse folgende Gleichungen:

**1.1**  $3x+4=7$

**1.2**  $\frac{1}{4}x^2 - \frac{1}{2}x = \frac{3}{4}$

**1.3**  $2 \cdot 2^x = 16$

**1.4**  $4x^5 + 24x^4 + 21x^3 = 49x^2$

**1.5**  $\frac{1}{x-5} = 0$

**1.6**  $x^2 - 2tx + t^2 = 0$

**1.7**  $\sin 6x = 0$

**1.8**  $2e^x = 2$

**1.9**  $-\frac{1}{32}x^4 + \frac{5}{8}x^2 - 2 = 0$

**1.10**  $-\frac{5}{2}x = 0$

**1.11**  $\frac{3x-2}{2x+5} = 0$

**1.12**  $-\frac{2}{k}x + 6 = 4k + 1, \quad k \neq 0$

**1.13**  $\sin 4x + \sin 3x = 0$

**1.14**  $-\frac{2}{9}x^2 - \frac{2}{3}x - \frac{3}{2} = 0$

**1.15**  $x^3 + 3ax^2 + 3a^2x + a^3 = 0$

**1.16**  $2e^x(1-e^x) = 0$

**1.17**  $\frac{x^3 - k^2x}{x+k} = 0$

**1.18**  $-\frac{3}{2}x^2 + 6 = 0$

**1.19**  $\cos 2x = \frac{1}{2}$

**1.20**  $-\frac{1}{5}x - 2 = \frac{4}{3}$

**1.21**  $e^{\frac{1}{2}x} - e^x = 0$

**1.22**  $-5x^3 - 15tx^2 + 16t^2x + 4t^3 = 0$

**1.23**  $\sin 5x + \cos x = 0$

**1.24**  $x^2 + bx - 2b^2 = 0$

**1.25**  $\tan 3x = -1$

**1.26**  $\frac{4x^3 - 8x^2 - 11x - 3}{2x+1} = 0$

**1.27**  $(x^2 - k^2)e^{kx} = 0$

**1.28**  $\tan 2x + \tan x = 0$

**1.29**  $\log_2(2x-1) = 3$

**1.30**  $\ln(2x+e) = 1$