Gleichungen höheren Grades, die auf Gleichungen zweiten Grades zurückgeführt werden können:

[251] $x^4 - 10x^2 + 9 = 0$

$x^4 - x^2 - 9x^2 + 9 = 0$

$x^2(x^2 - 1) - 9(x^2 - 1) = 0$

$(x^2 - 1)(x^2 - 9) = 0$

$x_{1/2}^2 = 1$ $x_{3/4}^2 = 9$

$x_1 = 1$ $x_2 = -1$ $x_3 = 3$ $x_4 = -3$

Probe:

$(\pm 1)^4 - 10(\pm 1)^2 + 9 = 0$

$1 - 10 + 9 = 0$

$0 = 0$

$(\pm 3)^4 - 10(\pm 3)^2 + 9 = 0$

$81 - 90 + 9 = 0$

$0 = 0$

[252] $x^4 + 4 = 5x^2$

[253] $x^4 - 17x^2 + 16 = 0$

[254] $12x^4 + 3 = 20x^2$

[255] $3x^4 - 20 = 7x^2$

[256] $x^2(x^2 - 12) + 27 = 0$

[257] $(x^2 - 5)^2 + (x^2 - 8)^2 = 17$

[258] $(x^2 - 9)(x^2 - 16) = 15x^2$

[259] $\frac{x^4 + 10x^2 + 9}{x^4 - 10x^2 + 9} = \frac{a}{b}$

[260] $2a = x^2 + 2b + \frac{4b(a - 2b)}{x^2}$

[261] $x^4 + 4(ab)^2 = 2(a^2 + b^2)x^2$

[262] $x^4 - (a^2 + b)x^2 + a^2b = 0$

[263] $2(\sqrt{x} - 3)^2 - 3 = \sqrt{x}$

[264] $x^4 - 8(a + b)x^2 + 16(a - b)^2 = 0$

[265] $a^4 + b^4 - 2(ab)^2 = 2a^2x^2 + 2(bx)^2 - x^4$

[266] $x^4 - 2(a^2 - 2ab + b^2)x^2 + (a - b)^4 = 0$

[267] $(x - 5)^2 + \frac{120}{(x - 5)^2} = 26$

[268] $x^6 + 7x^3 - 8 = 0$

[269] $x^6 - 28x^3 + 27 = 0$

[270] $8x^{-6} + 999x^{-3} = 125$