

Fur 4 grad, wenn $n=2$ wozeln gleich

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$$\begin{aligned} 2x + y + z &= a, & (y+z) &= m, & 2x + m &= a \\ x^2 + 2x(y+z) + yz &= b, & (yz) &= \varphi, & x^2 + 2mx + \varphi &= b \\ x^2(y+z) + 2xyz &= c, & & & mx^2 + 2\varphi x &= c \\ x^2yz &= d, & & & \varphi x^2 &= d \end{aligned}$$

$$m = a - 2x = \frac{b - x^2 - \varphi}{2x} = \frac{c - 2\varphi x}{x^2}$$

$$\left. \begin{aligned} 2ax - 4x^2 &= b - x^2 - \varphi \\ ax^2 - 2x^3 &= c - 2\varphi x \end{aligned} \right\} \varphi = \frac{2x^3 - ax^2 + c}{2x} = \frac{2x^3 - ax^2 + c}{2x}$$

$$\left. \begin{aligned} 3x^4 - 2ax^3 + bx^2 - d &= 0 \\ 2x^4 - ax^3 + cx - 2d &= 0 \end{aligned} \right\} \begin{aligned} x^4 - \frac{2ax^3}{3} + \frac{bx^2}{3} - \frac{d}{3} &= 0 \\ x^4 - \frac{ax^3}{2} + \frac{cx}{2} - \frac{2d}{2} &= 0 \end{aligned}$$

$$\left. \begin{aligned} \frac{ax^3}{6} - \frac{bx^2}{3} + \frac{cx}{2} - \frac{2d}{3} &= 0 \\ 4x^3 - 3ax^2 + 2bx - c &= 0 \end{aligned} \right\} \begin{aligned} x^3 - \frac{2bx^2}{a} + \frac{3cx}{a} - \frac{4d}{a} &= 0 \\ x^3 - \frac{3ax^2}{4} + \frac{2bx}{4} - \frac{c}{4} &= 0 \end{aligned}$$

$$(3aa - 8b)x^2 + (12c - 2bb)x - 16d + ac = 0$$

$$x^2 + \frac{(12c - 2bb)}{3aa - 8b}x - \frac{16d + ac}{3aa - 8b} = 0$$

Fur 5 grad.

$$\begin{aligned} 3x + (y+z) &= a, & (y+z) &= m, & 3x + m &= a \\ 3x^2 + 3x(y+z) + yz &= b, & (yz) &= \varphi, & 3x^2 + 3mx + \varphi &= b \\ x^3 + 3x^2(y+z) + 3xyz &= c, & & & x^3 + 3mx^2 + 3\varphi x &= c \\ x^2(y+z) + 3x^2yz &= d, & & & mx^3 + 3\varphi x^2 &= d \\ x^3yz &= e, & & & \varphi x^3 &= e \end{aligned}$$

$$m = a - 3x = \frac{b - 3x^2 - \varphi}{3x} = \frac{c - x^3 - 3\varphi x}{3x^2} = \frac{d - 3\varphi x^2}{x^3}$$

$$\left. \begin{aligned} 3ax - 9x^2 &= b - 3x^2 - \varphi \\ 3ax^2 - 9x^3 &= c - x^3 - 3\varphi x \\ ax^3 - 3x^4 &= d - 3\varphi x^2 \end{aligned} \right\} \varphi = \frac{6x^2 - 3ax + b}{3x} = \frac{8x^3 - 3ax^2 + c}{3x} = \frac{3x^4 - ax^3 + d}{3x^2} = \frac{e}{x^3}$$

$$\left. \begin{aligned} 3x^5 - ax^4 + dx - 3e &= 0 \\ 8x^5 - 3ax^4 + cx^2 - 3e &= 0 \\ 6x^5 - 3ax^4 + bx^3 - e &= 0 \end{aligned} \right\} \begin{aligned} x^5 - \frac{ax^4}{3} + \frac{dx}{3} - \frac{3e}{3} &= 0 \\ x^5 - \frac{3ax^4}{8} + \frac{cx^2}{8} - \frac{3e}{8} &= 0 \\ x^5 - \frac{3ax^4}{6} + \frac{bx^3}{6} - \frac{e}{6} &= 0 \end{aligned}$$

$$\left. \begin{aligned} x^4 - \frac{4bx^3}{3a} + \frac{3cx^2}{3a} - \frac{5e}{3a} &= 0 \\ x^4 - \frac{bx^3}{a} + \frac{2dx}{a} - \frac{5e}{a} &= 0 \end{aligned} \right\} \begin{aligned} \frac{3ax^4}{24} - \frac{4bx^3}{24} + \frac{3cx^2}{24} - \frac{5e}{24} &= 0 \\ \frac{ax^4}{6} - \frac{bx^3}{6} + \frac{2dx}{6} - \frac{5e}{6} &= 0 \end{aligned}$$

$$\left. \begin{aligned} x^3 - \frac{3cx^2}{b} + \frac{6dx}{b} - \frac{10e}{b} &= 0 \\ x^3 - \frac{6ax^2}{10} + \frac{3bx}{10} - \frac{c}{10} &= 0 \end{aligned} \right\} \begin{aligned} \frac{bx^3}{3a} - \frac{3cx^2}{3a} + \frac{6dx}{3a} - \frac{10e}{3a} &= 0 \\ 10x^3 - 6ax^2 + 3bx - c &= 0 \end{aligned}$$

$$(6ab - 30c)x^2 + (60d - 3bb)x + 100e - cb = 0$$

$$x^2 + \frac{(60d - 3bb)}{6ab - 30c}x + \frac{100e - cb}{6ab - 30c} = 0$$

ARC 407921AS.18

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für 2 6 grad

$$4x + (y+z) = a, \quad (y+z = m), \quad 4x + m = a$$

$$6x^2 + 4x(y+z) + yz = b, \quad (yz = \varphi), \quad 6x^2 + 4mx + \varphi = b$$

$$4x^3 + 6x^2(y+z) + 4xyz = c \dots \dots 4x^3 + 6mx^2 + 4\varphi x = c$$

$$x^4 + 4x^3(y+z) + 6x^2yz = d \dots \dots x^4 + 4mx^3 + 6\varphi x^2 = d$$

$$x^4(y+z) + 4x^3yz = e \dots \dots mx^4 + 4\varphi x^3 = e$$

$$x^4yz = f \dots \dots \varphi x^4 = f.$$

$$m = a - 4x = \frac{b - 6x^2 - \varphi}{4x} = \frac{c - 4x^3 - 4\varphi x}{6x^2} = \frac{d - x^4 - 6\varphi x^2}{4x^3} = \frac{e - 4\varphi x^3}{x^4}$$

$$\begin{aligned} 4ax - 6x^2 &= b - 6x^2 - \varphi & \varphi &= 10x^2 - 4ax + b = \frac{20x^3 - 6ax^2 + c}{4x} = \frac{15x^4 - 4ax^3 + d}{6x^2} \\ 6ax^2 - 24x^3 &= c - 4x^3 - 4\varphi x & &= \frac{4x^5 - ax^4 + e}{4x^3} = \frac{f}{x^4} \\ 4ax^3 - 16x^4 &= d - x^4 - 6\varphi x^2 \\ ax^4 - 4x^5 &= e - 4\varphi x^3 \end{aligned}$$

$4x^6 - ax^5 + ex - 4f = 0$	$x^6 - \frac{ax^5}{4} + \frac{ex}{4} - \frac{4f}{4} = 0$	$\frac{2ax^5}{20} + \frac{2bx^4}{20} + \frac{cx^3}{20} - \frac{2f}{20}$
$15x^6 - 4ax^5 + dx^2 - 6f = 0$	$x^6 - \frac{4ax^5}{15} + \frac{dx^2}{15} - \frac{6f}{15} = 0$	$\frac{4ax^5}{30} - \frac{3bx^4}{30} + \frac{2dx^2}{30} - \frac{9f}{30}$
$20x^6 - 6ax^5 + cx^3 - 4f = 0$	$x^6 - \frac{6ax^5}{20} + \frac{cx^3}{20} - \frac{4f}{20} = 0$	$\frac{3ax^5}{20} - \frac{2bx^4}{20} + \frac{5ex}{20} - \frac{18f}{20}$
$10x^6 - 4ax^5 + bx^4 - f = 0$	$x^6 - \frac{4ax^5}{10} + \frac{bx^4}{10} - \frac{f}{10} = 0$	$x^4 - \frac{2cx^3}{b} + \frac{2dx^2}{b} - \frac{5f}{b}$

$x^5 - \frac{2bx^4}{2a} + \frac{cx^3}{2a} - \frac{2f}{2a}$	$\frac{2bx^4}{4a} - \frac{2cx^3}{4a} + \frac{2dx^2}{4a} - \frac{5f}{4a}$	$x^4 - \frac{3cx^3}{2b} + \frac{10ex}{2b} - \frac{30f}{2b}$
$x^5 - \frac{3bx^4}{4a} + \frac{2dx^2}{4a} - \frac{9f}{4a}$	$\frac{2bx^4}{6a} - \frac{3cx^3}{6a} + \frac{10ex}{6a} - \frac{30f}{6a}$	
$x^5 - \frac{2bx^4}{3a} + \frac{5ex}{3a} - \frac{18f}{3a}$		

$\frac{c}{2b}x^3 - \frac{4dx^2}{2b} + \frac{10ex}{2b} - \frac{20f}{2b} = 0$	$x^3 - \frac{4dx^2}{c} + \frac{10ex}{c} - \frac{20f}{c} = 0$	
$20x^3 - 10ax^2 + 4bx - c = 0$	$x^3 - \frac{10ax^2}{20} + \frac{4bx}{20} - \frac{c}{20} = 0$	
	$(10ac - 80d)x^2 + (200e - 4bc)x - 400f + cc = 0$	

$$x^2 + \left(\frac{200e - 4bc}{10ac - 80d} \right) x - \frac{400f + cc}{10ac - 80d} = 0$$

Lavuar 41

für 4 grad: $x^3 - \frac{3ax^2}{4} + \frac{2bx}{4} - \frac{c}{4} = 0$

für 5 grad: $x^3 - \frac{6ax^2}{10} + \frac{3bx}{10} - \frac{c}{10} = 0$

für 6 grad: $x^3 - \frac{10ax^2}{20} + \frac{4bx}{20} - \frac{c}{20} = 0$

für 7 grad: $x^3 - \frac{15ax^2}{35} + \frac{5bx}{35} - \frac{c}{35} = 0$

für 8 grad: $x^3 - \frac{21ax^2}{56} + \frac{6bx}{56} - \frac{c}{56} = 0$

folgt

für n grad $x^3 - \frac{(n-1)(n-2)ax^2}{2} + \frac{(n-2)bx}{\frac{n(n-1)(n-2)}{3 \cdot 2 \cdot 1}} - \frac{c}{\frac{n(n-1)(n-2)}{3 \cdot 2 \cdot 1}} = 0$

oder

für n grad $x^3 - \frac{3ax^2}{n} + \frac{6bx}{n(n-1)} - \frac{6c}{n(n-1)(n-2)} = 0$

Woraus abzumal folgt, daß die Auflösung einer Gleichung von n Grad mit ~~n~~ der allgemeinen Auflösung einer Gleichung die n-a gleich. Wurzeln hat & sammtlich laugen muß.

Fun of 7. grad.

4

$$\begin{array}{l}
 5x + y + z = a, \quad (y+z = m), \quad 5x + m = a \\
 10x^2 + 5x(y+z) + yz = b, \quad (yz = \varphi), \quad 10x^2 + 5mx + \varphi = b \\
 10x^3 + 10x^2(y+z) + 5xyz = c \\
 5x^4 + 10x^3(y+z) + 10x^2yz = d \\
 x^5 + 5x^4(y+z) + 10x^3yz = e \\
 x^5(y+z) + 5x^4yz = \delta \\
 \varphi x^5 = g
 \end{array}$$

$$m = a - 5x = \frac{b - 10x^2 - \varphi}{5x} = \frac{c - 10x^3 - 5\varphi x}{10x^2} = \frac{d - 5x^4 - 10\varphi x^2}{10x^3} = \frac{e - 5x^5 - 10\varphi x^3}{5x^4} = \frac{\delta - 5\varphi x^4}{x^5}$$

$$\begin{array}{l}
 5ax - 25x^2 = b - 10x^2 - \varphi \\
 10ax^2 - 50x^3 = c - 10x^3 - 5\varphi x \\
 10ax^3 - 50x^4 = d - 5x^4 - 10\varphi x^2 \\
 5ax^4 - 25x^5 = e - x^5 - 10\varphi x^3 \\
 ax^5 - 5x^6 = \delta - 5\varphi x^4
 \end{array}$$

$$\begin{array}{l}
 \varphi = \frac{15x^2 - 5ax + b}{5x} = \frac{40x^3 - 10ax^2 + c}{5x} = \frac{45x^4 - 10ax^3 + d}{10x^2} \\
 = \frac{24x^5 - 5ax^4 + e}{10x^3} = \frac{5x^6 - ax^5 + \delta}{5x^4} = \frac{g}{x^5}
 \end{array}$$

$$\begin{array}{l}
 5x^7 - ax^6 + \delta x - 5g = 0 \\
 24x^7 - 5ax^6 + ex^2 - 10g = 0 \\
 45x^7 - 10ax^6 + dx^3 - 10g = 0 \\
 40x^7 - 10ax^6 + cx^4 - 5g = 0 \\
 15x^7 - 5ax^6 + bx^5 - g = 0
 \end{array}$$

$$\begin{array}{l}
 x^7 - \frac{ax^6}{5} + \frac{\delta x}{5} - \frac{5g}{5} = 0 \\
 x^7 - \frac{5ax^6}{24} + \frac{ex^2}{24} - \frac{10g}{24} = 0 \\
 x^7 - \frac{10ax^6}{45} + \frac{dx^3}{45} - \frac{10g}{45} = 0 \\
 x^7 - \frac{10ax^6}{40} + \frac{cx^4}{40} - \frac{5g}{40} = 0 \\
 x^7 - \frac{5ax^6}{15} + \frac{bx^5}{15} - \frac{g}{15} = 0
 \end{array}$$

$$\begin{array}{l}
 \frac{ax^6}{12} - \frac{bx^5}{15} + \frac{cx^4}{40} - \frac{7g}{120} = 0 \\
 \frac{ax^6}{9} - \frac{bx^5}{15} + \frac{dx^3}{45} - \frac{7g}{45} = 0 \\
 \frac{ax^6}{8} - \frac{bx^5}{15} + \frac{ex^2}{24} - \frac{7g}{20} = 0 \\
 \frac{2ax^6}{15} - \frac{bx^5}{15} + \frac{3\delta x}{15} - \frac{14g}{15} = 0
 \end{array}$$

$$\begin{array}{l}
 x^6 - \frac{4bx^5}{5a} + \frac{3cx^4}{10a} - \frac{7g}{10a} = 0 \\
 x^6 - \frac{3bx^5}{5a} + \frac{dx^3}{5a} - \frac{7g}{5a} = 0 \\
 x^6 - \frac{8bx^5}{15a} + \frac{ex^2}{3a} - \frac{14g}{5a} = 0 \\
 x^6 - \frac{bx^5}{2a} + \frac{3\delta x}{2a} - \frac{14g}{2a} = 0
 \end{array}$$

$$\begin{array}{l}
 \frac{bx^5}{5a} - \frac{3cx^4}{10a} + \frac{dx^3}{5a} - \frac{7g}{10a} = 0 \\
 \frac{4bx^5}{15a} - \frac{3cx^4}{10a} + \frac{ex^2}{3a} - \frac{21g}{10a} = 0 \\
 \frac{3bx^5}{10a} - \frac{3cx^4}{10a} + \frac{15\delta x}{10a} - \frac{63g}{10a} = 0
 \end{array}$$

$$\begin{array}{l}
 x^5 - \frac{3cx^4}{26} + \frac{2dx^3}{26} - \frac{7g}{26} = 0 \\
 x^5 - \frac{9cx^4}{86} + \frac{5ex^2}{46} - \frac{63g}{86} = 0 \\
 x^5 - \frac{cx^4}{6} + \frac{5\delta x}{6} - \frac{21g}{6} = 0 \\
 \frac{22x^5}{3c} - \frac{10cx^4}{7c} + \frac{10\delta x}{5c} - \frac{70g}{5c} = 0
 \end{array}$$

$$\begin{array}{l}
 \frac{3cx^4}{8b} - \frac{8dx^3}{8b} + \frac{10ex^2}{8b} - \frac{35g}{8b} = 0 \\
 \frac{cx^4}{2b} - \frac{2dx^3}{2b} + \frac{10\delta x}{2b} - \frac{35g}{2b} = 0
 \end{array}$$

$$\begin{array}{l}
 x^4 - \frac{8dx^3}{3c} + \frac{10ex^2}{3c} - \frac{35g}{3c} = 0 \\
 x^4 - \frac{2dx^3}{c} + \frac{10\delta x}{c} - \frac{35g}{c} = 0
 \end{array}$$

$$\begin{array}{l}
 \frac{2dx^3}{3c} - \frac{10ex^2}{3c} + \frac{30\delta x}{3c} - \frac{70g}{3c} = 0 \\
 35x^3 - 15ax^2 + 5bx - c = 0
 \end{array}$$

$$\begin{array}{l}
 x^3 - \frac{6ex^2}{2d} + \frac{15\delta x}{2d} - \frac{35g}{2d} = 0 \\
 x^3 - \frac{15ax^2}{35} + \frac{5\delta x}{35} - \frac{c}{35} = 0
 \end{array}$$

$$(15ad - 175e)x^2 + (525\delta - 5bd)x - 1225g + cd = 0$$

$$x^2 + \left(\frac{525\delta - 5bd}{15ad - 175e} \right) x - \frac{1225g + cd}{15ad - 175e} = 0$$

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für 8 grad

$$x^2 + \left(\frac{1176g - 6be}{21ae - 336f} \right) x - \frac{3136h + ce}{21ae - 336f} = 0$$

Wir haben also

$$\text{für 4 grad, } x^2 + \left(\frac{12c - 2ba}{3aa - 8b} \right) x - \left(\frac{16d + ca}{3aa - 8b} \right) = 0$$

$$\text{für 5 grad, } x^2 + \left(\frac{60d - 3bb}{6ab - 30c} \right) x - \left(\frac{100e + cb}{6ab - 30c} \right) = 0$$

$$\text{für 6 grad, } x^2 + \left(\frac{200e - 4bc}{10ac - 80d} \right) x - \left(\frac{400f + cc}{10ac - 80d} \right)$$

$$\text{für 7 grad, } x^2 + \left(\frac{525f - 5bd}{15ad - 175e} \right) x - \left(\frac{1225g + cd}{15ad - 175e} \right)$$

$$\text{für 8 grad, } x^2 + \left(\frac{1176g - 6be}{21ae - 336f} \right) x - \left(\frac{3136h + ce}{21ae - 336f} \right)$$

oder wenn wir die a, b, p, q, r , die augenwärtigen
 Bedeutung haben, und κ den Coeff. von x^3 voraussetzt
 so ist allgemein für n^{ten} grad

$$x^2 + \left(\frac{n(n-1)(n-1)(n-2)(n-2)p - \overset{(n-2)}{ab\kappa}}{3 \cdot 2 \cdot 2 \cdot 1 \cdot 1} \right) x - \left(\frac{\frac{n(n-1)(n-1)(n-2)(n-2)r - c\kappa}{3 \cdot 3 \cdot 2 \cdot 2 \cdot 1 \cdot 1} - \frac{(n-1)(n-2)ak - \frac{n(n-1)(n-2)(n-2)q}{3 \cdot 2 \cdot 1 \cdot 1}}{2 \cdot 1}}{\frac{n(n-1)(n-1)(n-2)(n-2)r + 36c\kappa}{6(n-1)(n-2)(2ak - n(n-2)q)}} \right)$$

зүйм 3^о град.

6

$$\begin{aligned} 2x + y &= a \\ x^2 + 2xy &= b \\ x^2 y &= c \end{aligned}$$

$$y = a - 2x = \frac{b - x^2}{2x} = \frac{c}{x^2}$$

$$\begin{aligned} bx - x^3 &= 2c \\ ax^2 - 2x^3 &= c \end{aligned}$$

$$\begin{aligned} x^3 - bx + 2c &= 0 \\ x^3 - \frac{ax^2}{2} + \frac{c}{2} &= 0 \end{aligned}$$

$$x^2 - \frac{2bx}{a} + \frac{3c}{a} = 0$$

$$\frac{ax^2}{2} - bx + 2c - \frac{c}{2} = 0$$

$$x^2 - \frac{2ax}{3} + \frac{b}{3}$$

$$2ax - 4x^2 = b - x^2$$

$$\left(\frac{2a}{3} - \frac{2b}{a}\right)x + \frac{3c}{a} - \frac{b}{3}$$

$$(2a^2 - 6b)x = ab - 9c$$

$$x = \frac{ab - 9c}{2a^2 - 6b} = \frac{ab - 9c}{2(a^2 - 3b)}$$

зүйм 4^о град.

$$\begin{aligned} 3x + y &= a \\ 3x^2 + 3xy &= b \\ x^3 + 3x^2 y &= c \\ x^3 y &= d \end{aligned}$$

$$y = a - 3x = \frac{b - 3x^2}{3x} = \frac{c - x^3}{3x^2} = \frac{d}{x^3}$$

$$\begin{aligned} cx - x^4 &= 3d \\ bx^2 - 3x^4 &= 3d \\ ax^3 - 3x^4 &= d \end{aligned}$$

$$\begin{aligned} x^4 - cx + 3d &= 0 \\ x^4 - \frac{bx^2}{3} + \frac{d}{3} &= 0 \\ x^4 - \frac{ax^3}{3} + \frac{d}{3} &= 0 \end{aligned}$$

$$x^3 - \frac{3cx}{a} + \frac{3d}{a} = 0$$

$$\frac{ax^3}{3} - cx + 3d - \frac{d}{3} = 0$$

$$x^3 - \frac{bx^2}{a} + \frac{2d}{a} = 0$$

$$\frac{ax^3}{3} - \frac{bx^2}{3} + \frac{2d}{3} - \frac{d}{3} = 0$$

$$bx^2 - 3cx + 6d = 0$$

$$x^2 - \frac{3cx}{b} + \frac{6d}{b} = 0$$

$$3ax - 9x^2 = b - 3x^2$$

$$x^2 - \frac{3ax}{b} + \frac{b}{b}$$

$$(3ab - 18c)x = b^2 - 36d$$

$$\left(\frac{3a}{b} - \frac{3c}{b}\right)x + \frac{6d}{b} - \frac{b}{b} = 0$$

$$x = \frac{b^2 - 36d}{3ab - 18c} = \frac{b^2 - 36d}{3ab - 18c} = \frac{b^2 - 36d}{3(ab - 6c)}$$

Zum 5^{ten} grad.

$$\begin{aligned} 7 \quad 4x + y &= a \\ 6x^2 + 4xy &= b \\ 4x^3 + 6x^2y &= c \\ x^4 + 4x^3y &= d \\ x^4y &= e \end{aligned}$$

$$y = a - 4x = \frac{b - 6x^2}{4x} = \frac{c - 4x^3}{6x^2} = \frac{d - x^4}{4x^3} = \frac{e}{x^4}$$

$$\begin{aligned} 2x - x^5 &= 4e \\ cx^2 - 4x^5 &= 6e \\ bx^3 - 6x^5 &= 4e \\ ax^4 - 4x^5 &= e \end{aligned}$$

$$\begin{aligned} x^5 - 2x + 4e &= 0 \\ x^5 - \frac{cx^2}{4} + \frac{6e}{4} &= 0 \\ x^5 - \frac{bx^3}{6} + \frac{4e}{6} &= 0 \\ x^5 - \frac{ax^4}{4} + \frac{e}{4} &= 0 \end{aligned}$$

$$\frac{bx^3}{6} - \frac{cx^2}{4} + \frac{6e}{4} - \frac{4e}{6} = 0$$

$$\frac{ax^4}{4} - \frac{bx^3}{6} + \frac{4e}{6} - \frac{e}{4} = 0$$

$$\frac{bx^3}{6} - 2x + 4e - \frac{4e}{6} = 0$$

$$\frac{ax^4}{4} - \frac{cx^2}{4} + \frac{6e}{4} - \frac{e}{4} = 0$$

$$\frac{cx^2}{4} - 2x + 4e - \frac{6e}{4} = 0$$

$$\frac{ax^4}{4} - \frac{dx}{4} + 4e - \frac{e}{4} = 0$$

$$4ax - 6x^2 = b - 6x^2$$

$$x^2 - \frac{4ax}{c} + \frac{10e}{c} = 0$$

$$(4ac - 40d)x = cb - 100e$$

$$x^2 - \frac{4ax}{10} + \frac{b}{10} = 0$$

$$\left(\frac{4a}{10} - \frac{4d}{c}\right)x + \frac{10e}{c} - \frac{b}{10} = 0$$

$$x = \frac{cb - 100e}{4(ac - 10d)}$$

Zum 6^{ten} grad.

$$\begin{aligned} 5x + y &= a \\ 10x^2 + 5xy &= b \\ 10x^3 + 10x^2y &= c \\ 5x^4 + 10x^3y &= d \\ x^5 + 5x^4y &= e \\ x^5y &= f \end{aligned}$$

$$y = a - 5x = \frac{b - 10x^2}{5x} = \frac{c - 10x^3}{10x^2} = \frac{d - 5x^4}{10x^3} = \frac{e - x^5}{5x^4} = \frac{f}{x^5}$$

$$\begin{aligned} ex - x^6 &= 5f \\ 2x^2 - 5x^6 &= 10f \\ cx^3 - 10x^6 &= 10f \\ bx^4 - 10x^6 &= 5f \\ ax^5 - 5x^6 &= f \end{aligned}$$

$$\begin{aligned} x^6 - ex + 5f &= 0 \\ x^6 - \frac{2x^2}{5} + \frac{10f}{5} &= 0 \\ x^6 - \frac{cx^3}{10} + \frac{10f}{10} &= 0 \\ x^6 - \frac{bx^4}{10} + \frac{5f}{10} &= 0 \\ x^6 - \frac{ax^5}{5} + \frac{f}{5} &= 0 \end{aligned}$$

$$\frac{bx^4}{10} - \frac{cx^3}{10} + \frac{10f}{10} - \frac{5f}{10} = 0$$

$$x^2 - \frac{5e}{10} + \frac{15f}{10} = 0$$

$$\frac{ax^5}{5} - \frac{bx^4}{10} + \frac{5f}{10} - \frac{f}{5} = 0$$

$$\frac{bx^4}{10} - \frac{2x^2}{5} + \frac{10f}{5} - \frac{5f}{10} = 0$$

$$x^2 - \frac{5ax}{15} + \frac{b}{15} = 0$$

$$\frac{ax^5}{5} - \frac{cx^3}{10} + \frac{10f}{10} - \frac{f}{5} = 0$$

$$\frac{bx^4}{10} - ex + 5f - \frac{5f}{10} = 0$$

$$\left(\frac{5a}{15} - \frac{5e}{15}\right)x = \frac{b}{15} - \frac{225f}{15}$$

$$\frac{ax^5}{5} - \frac{2x^2}{5} + \frac{10f}{5} - \frac{f}{5} = 0$$

$$\frac{cx^3}{10} - \frac{2x^2}{5} + \frac{10f}{5} - \frac{10f}{10} = 0$$

$$-\frac{15f}{15} + \frac{b}{15} = 0$$

$$\frac{ax^5}{5} - ex + 5f - \frac{f}{5} = 0$$

$$\frac{cx^3}{10} - ex + 5f - \frac{10f}{10} = 0$$

$$(5ad - 75e)x = 2b - 225f$$

$$\frac{2x^2}{5} - ex + 5f - \frac{10f}{5} = 0$$

$$x = \frac{2b - 225f}{5(ad - 15e)}$$

$$5ax - 25x^2 = b - 10x^2$$

Zum 7 Grad.

$$\begin{aligned} 6x + y &= a \\ 15x^2 + 6xy &= b \\ 20x^3 + 15x^2y &= c \\ 15x^4 + 20x^3y &= d \\ 6x^5 + 15x^4y &= e \\ x^6 + 6x^5y &= f \\ x^6y &= g \end{aligned}$$

$$y = a - 6x = \frac{b - 6x^2}{6x} = \frac{c - 20x^3}{15x^2} = \frac{d - 15x^4}{20x^3} = \frac{e - 6x^5}{15x^4} = \frac{f - x^6}{6x^5} = \frac{g}{x^6}$$

$$\begin{aligned} fx - x^7 &= 6g \\ ex^2 - 6x^7 &= 15g \\ dx^3 - 15x^7 &= 20g \\ cx^4 - 20x^7 &= 15g \\ bx^5 - 15x^7 &= 6g \\ ax^6 - 6x^7 &= g \end{aligned}$$

$$\begin{aligned} x^7 - fx + 6g &= 0 \\ x^7 - \frac{ex^2}{6} + \frac{15g}{6} &= 0 \\ x^7 - \frac{dx^3}{15} + \frac{20g}{15} &= 0 \\ x^7 - \frac{cx^4}{20} + \frac{15g}{20} &= 0 \\ x^7 - \frac{bx^5}{15} + \frac{6g}{15} &= 0 \\ x^7 - \frac{ax^6}{6} + \frac{g}{6} &= 0 \end{aligned}$$

$$\begin{aligned} \frac{ax^6}{6} - \frac{bx^5}{15} + \frac{6g}{15} - \frac{g}{6} &= 0 \\ \frac{ax^6}{6} - \frac{cx^4}{20} + \frac{15g}{20} - \frac{g}{6} &= 0 \\ \frac{ax^6}{6} - \frac{dx^3}{15} + \frac{20g}{15} - \frac{g}{6} &= 0 \\ \frac{ax^6}{6} - \frac{ex^2}{6} + \frac{15g}{6} - \frac{g}{6} &= 0 \\ \frac{ax^6}{6} - fx + 6g - \frac{g}{6} &= 0 \end{aligned}$$

$$\begin{aligned} \frac{bx^5}{15} - \frac{cx^4}{20} + \frac{15g}{20} - \frac{6g}{15} &= 0 \\ \frac{bx^5}{15} - \frac{dx^3}{15} + \frac{20g}{15} - \frac{6g}{15} &= 0 \\ \frac{bx^5}{15} - \frac{ex^2}{6} + \frac{15g}{6} - \frac{6g}{15} &= 0 \\ \frac{bx^5}{15} - fx + 6g - \frac{6g}{15} &= 0 \end{aligned}$$

$$\begin{aligned} \frac{cx^4}{20} - \frac{dx^3}{15} + \frac{20g}{15} - \frac{15g}{20} &= 0 \\ \frac{cx^4}{20} - \frac{ex^2}{6} + \frac{15g}{6} - \frac{15g}{20} &= 0 \\ cx^4 - fx + 6g - \frac{15g}{20} &= 0 \end{aligned}$$

$$\begin{aligned} \frac{dx^3}{15} - \frac{ex^2}{6} + \frac{15g}{6} - \frac{20g}{15} &= 0 \\ \frac{dx^3}{15} - fx + 6g - \frac{20g}{15} &= 0 \end{aligned}$$

$$\frac{ex^2}{6} - fx + 6g - \frac{15g}{6} = 0$$

$$6ax - 36x^2 = b - 15x^2$$

$$\begin{aligned} x^2 - \frac{6fx}{e} + \frac{21g}{e} &= 0 \\ x^2 - \frac{6ax}{21} + \frac{b}{21} &= 0 \end{aligned}$$

$$(6ae - 216f)x = (be - 441g)$$

$$x = \frac{be - 441g}{6(ae - 21f)}$$

$$\left(\frac{6a}{21} - \frac{6f}{e}\right)x + \frac{21g}{e} - \frac{b}{21} = 0$$

Wenn also in einem Gleichung vom n^{ten} Grad, $n-1$ Wurzeln
 ein anderes gleich sind, so ist der Wert dieser Wurzeln

- für den 3^{ten} Grad $x = \frac{ba - 9c}{2(ad - 3b)}$
-
- 4^{ten} $x = \frac{bb - 36d}{3(ab - 6c)}$
-
- 5^{ten} $x = \frac{bc - 100e}{4(ac - 10d)}$
-
- 6^{ten} $x = \frac{bd - 225f}{5(ad - 15e)}$
-
- 7^{ten} $x = \frac{be - 441g}{6(ae - 21f)}$

