

Lösungen:

<p><b>1</b></p>	<p>Bitte bringen Sie's in die Form <math>(\square + \square)(\square + \square)</math></p> <p>a) <math>16ev + 2v + 8e^2 + e</math>   L: <math>(2v + e)(8e + 1)</math>  b) <math>-13ac - 6cv + 91ad + 42dv</math>   L: <math>(c - 7d)(-13a - 6v)</math>  c) <math>120ab + 15aq + 16be + 2eq</math>   L: <math>(15a + 2e)(8b + q)</math>  d) <math>23qw - 12q^2 + 2w^2</math>   L: <math>(-q + 2w)(w + 12q)</math>  e) <math>-4pt + 3tw + 16ip - 12iw</math>   L: <math>(t - 4i)(-4p + 3w)</math>  f) <math>15c^2f^2q^2 - 6c^2q^2 - 5f^2x^2y^2 + 2x^2y^2</math>   L: <math>(-3c^2q^2 + x^2y^2)(-5f^2 + 2)</math>  g) <math>14m^2y^2 + 105m^3y^2 + 12m^3y^4 + 90m^4y^4</math>   L: <math>(7m + 6m^2y^2)(2my^2 + 15m^2y^2)</math>  h) <math>-48f^2h^2t^2 + 9f^2ot^2 + 32fh^2 - 6fo</math>   L: <math>(-3ft^2 + 2)(16fh^2 - 3fo)</math>  i) <math>b^2cm + 13cmn - b^2m^2 - 13m^2n</math>   L: <math>(cm - m^2)(b^2 + 13n)</math></p>
<p><b>2</b></p>	<p>Bitte berechnen Sie</p> <p>a)</p> $\frac{-4,9t + 4,8p}{-4,4d + 7,4s} - \frac{9,3s + 9,6j}{-7,3c + 5,7z}$ <p style="text-align: center;">L:</p> $\frac{-4,9t + 4,8p}{-4,4d + 7,4s} - \frac{9,3s + 9,6j}{-7,3c + 5,7z} = \frac{35,77ct - 27,93tz - 35,04cp + 27,36pz + 40,92ds + 42,24dj - 68,82s^2 - 71,04js}{32,12cd - 25,08dz - 54,02cs + 42,18sz}$ <p>b)</p> $\frac{10,4mx^2 - 7,4m^2u}{-11,1mu^2 + 7,1m} + \frac{-2u^2 - 6,6}{12,4u + 2,4m^2x}$ <p style="text-align: center;">L:</p> $\frac{128,96ux^2 + 24,96m^2x^3 - 91,76mu^2 - 17,76m^3ux + 22,2u^4 + 59,06u^2 - 46,86}{-137,64u^3 - 26,64m^2u^2x + 88,04u + 17,04m^2x}$
<p><b>3</b></p>	<p>Bitte berechnen Sie die Unbekannten</p> <p>a) <math>\left(\left(\left(\frac{7}{5}j + \frac{3}{2}\right) * \frac{5}{4} - \frac{3}{4}\right) * \left(-\frac{3}{2}\right) + \frac{3}{2}\right) * \frac{1}{4} - 3) * \frac{1}{4} + 4 = \frac{409}{256}</math>   L: <math>j = 10</math></p> <p>b) <math>\left(\left(\left(-\frac{1}{9}a + \frac{1}{2}\right) * \left(-\frac{1}{4}\right) - \frac{1}{7}\right) * \left(-\frac{9}{2}\right) - \frac{1}{4}\right) * 5 + 2 = \frac{829}{112}</math>   L: <math>a = -1</math></p> <p>c) <math>\left(-\frac{8}{5}v + 2\right) * (-2) + \frac{5}{2}v = -\frac{97}{10}</math>   L: <math>v = -1</math></p> <p>d) <math>\left(\left(\left(-\frac{1}{2}q + \frac{9}{8}\right) * \left(-\frac{1}{3}\right) + \frac{5}{4}q\right) * \left(-\frac{4}{7}\right) - \frac{5}{2}q\right) * \frac{9}{2} + \frac{8}{7}q) * \frac{1}{8} - \frac{1}{2}q = \frac{157}{14}</math>   L: <math>q = -5</math></p> <p>e) <math>\left(\left(\left(\frac{4}{5}u - 5\right) * \frac{5}{3} + \frac{5}{2}u\right) * \frac{1}{5} + \frac{9}{7}u\right) * 3 + \frac{9}{5}u = \frac{207}{70}</math>   L: <math>u = 1</math></p>

4 Bitte berechnen Sie alle Unbekannten

a)

$$\frac{4s}{v} = \frac{-2i}{r}$$

L :

$$s = \frac{-1}{2} * \frac{vi}{r}$$

$$v = -2 * \frac{sr}{i}$$

$$i = -2 * \frac{sr}{v}$$

$$r = \frac{-1}{2} * \frac{vi}{s}$$

b)

$$\frac{5}{-2} = \frac{1}{2g}$$

L :

$$g = \frac{-1}{5}$$

c)

$$\frac{g}{-2n} = \frac{5p}{-4}$$

L :

$$g = \frac{5}{2} * np$$

$$n = \frac{2}{5} * \frac{g}{p}$$

$$p = \frac{2}{5} * \frac{g}{n}$$

5 Bitte berechnen Sie die geforderten Unbekannten

a)

$$\frac{7m - 10p}{-8y - 3} + 10x = 6d \quad [\text{mpy}]$$

L :

$$m = \frac{-48dy - 18d + 80xy + 30x + 10p}{7}$$

$$p = \frac{-48dy - 18d + 80xy + 30x - 7m}{-10}$$

$$y = \frac{-18d + 30x - 7m + 10p}{48d - 80x}$$

b)

$$\frac{-8d - 5io}{-9nu + 4z} - 7j = 2o \quad [d \text{ ou } z]$$

L :

$$d = \frac{-18nou + 8oz - 63jnu + 28jz + 5io}{-8}$$

$$o = \frac{-63jnu + 28jz + 8d}{18nu - 8z - 5i}$$

$$u = \frac{8oz + 28jz + 8d + 5io}{18no + 63jn}$$

$$z = \frac{-18nou - 63jnu + 8d + 5io}{-8o - 28j}$$