

## Lösungen:

<b>1</b>	<p>Bitte finden Sie die quadratische Ergänzung und nennen Sie die ganze binomische Formel</p> <p>a) <math>5,76c^2 + 4,8cg^2v^2</math>   L: <math>5,76c^2 + 4,8cg^2v^2 + g^4v^4 = (2,4c + g^2v^2)^2</math></p> <p>b) <math>x^2 + px</math>   L: <math>x^2 + px + 0,25p^2 = (x + 0,5p)^2</math></p> <p>c) <math>46,24t^4y^2 - 25,84j^2t^4y</math>   L: <math>46,24t^4y^2 - 25,84j^2t^4y + 3,61j^4t^4 = (6,8t^2y - 1,9j^2t^2)^2</math></p> <p>d) <math>86,49g^2v^2 - 104,16gr^2v</math>   L: <math>86,49g^2v^2 - 104,16gr^2v + 31,36r^4 = (9,3gv - 5,6r^2)^2</math></p>
<b>2</b>	<p>Bitte isolieren Sie die genannten Unbekannten</p> <p>a)</p> $-5r + 7 = 7f - 9dp \quad [r \ f \ d \ p]$ <p style="text-align: center;">L :</p> $r = \frac{7f - 9dp - 7}{-5}$ $f = \frac{-9dp + 5r - 7}{-7}$ $d = \frac{7f + 5r - 7}{9p}$ $p = \frac{7f + 5r - 7}{9d}$ <p>b)</p> $4u - 9 = -5ms - 4sz \quad [u \ s \ m \ z]$ <p style="text-align: center;">L :</p> $u = \frac{-5ms - 4sz + 9}{4}$ $s = \frac{-4u + 9}{5m + 4z}$ $m = \frac{-4sz - 4u + 9}{5s}$ $z = \frac{-5ms - 4u + 9}{4s}$ <p>c)</p> $\frac{-9vz + 5}{n - 1} + 4v = -4m \quad [z \ v \ n]$ <p style="text-align: center;">L :</p> $z = \frac{-4mn + 4m - 4nv + 4v - 5}{-9v}$ $v = \frac{-4mn + 4m - 5}{4n - 4 - 9z}$ $n = \frac{4m + 4v + 9vz - 5}{4m + 4v}$

	<p>d)</p> $\frac{c + 8,7}{-1,5t + 5,8pt} + 6,7h = -9,3e \quad [c \ t \ p]$ <p>L :</p> $c = 13,95et - 53,94ept + 10,05ht - 38,86ht - 8,7$ $t = \frac{-c - 8,7}{-13,95e + 53,94ep - 10,05h + 38,86hp}$ $p = \frac{13,95et + 10,05ht - c - 8,7}{53,94et + 38,86ht}$
<p>3</p>	<p>Bitte berechnen Sie</p> <p>a)</p> $\frac{\left(\frac{-9}{-10} + \frac{-10}{9}\right) * \left(\frac{5}{-7} - \frac{-8}{9}\right)}{\left(\frac{2}{9} - \frac{1}{-6}\right) * \left(-\frac{7}{-9} + \frac{10}{-9}\right)} \quad   \quad L : \quad \frac{1991}{735}$ <p>b)</p> $\frac{\frac{-6}{-5} * \frac{-9}{4} * \frac{6}{7} * \frac{-10}{7}}{\frac{6}{-7} * \frac{6}{7} * \frac{5}{-6} * \frac{-1}{-3}} \quad   \quad L : \quad \frac{81}{5}$
<p>4</p>	<p>Bitte berechnen Sie</p> <p>a)</p> $\frac{8,3y^2 - 6,5}{-4,5j^2 - 10,2} + \frac{3,4r^2 + 4,7r^2u^2}{4,2y^2 - 6,5r}$ <p>L :</p> $\frac{34,86y^4 - 53,95ry^2 - 27,3y^2 + 42,25r - 15,3j^2r^2 - 21,15j^2r^2u^2 - 34,68r^2 - 47,94r^2u^2}{-18,9j^2y^2 + 29,25j^2r - 42,84y^2 + 66,3r}$ <p>b)</p> $\frac{3,3u^2v^2 - 4,9}{8,3j + 1,2} - \frac{2,9j^2 - 3,9y}{-6,5vy - 10,9}$ <p>L :</p> $\frac{-21,45u^2v^3y - 35,97u^2v^2 + 31,85vy + 53,41 - 24,07j^3 + 32,37jy - 3,48j^2 + 4,68y}{-53,95jvy - 90,47j - 7,8vy - 13,08}$
<p>5</p>	<p>Bitte bringen Sie's in die Form <math>(\square + \square)(\square + \square)</math></p> <p>a) <math>44u^2w^3 - 11uw^2 - 48uw + 12</math>   L: <math>(11uw^2 - 12)(4uw - 1)</math></p> <p>b) <math>-11bu - 4u - 55b^3 - 20b^2</math>   L: <math>(-u - 5b^2)(11b + 4)</math></p> <p>c) <math>5x^2 + 8x - 21</math>   L: <math>(5x - 7)(x + 3)</math></p> <p>d) <math>2s^4 + 13s^2 + 21</math>   L: <math>(2s^2 + 7)(s^2 + 3)</math></p>

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Bitte isolieren Sie nacheinander alle Unbekannten

a)

$$\frac{7,1s}{-6,7u} = \frac{-3,6e}{1,2d}$$

L :

$$s = 2,831 * \frac{ue}{d}$$

$$u = 0,3532 * \frac{sd}{e}$$

$$e = 0,3532 * \frac{sd}{u}$$

$$d = 2,831 * \frac{ue}{s}$$

b)

$$\frac{-4}{-3o} = \frac{-7f}{4b}$$

L :

$$o = \frac{-16}{21} * \frac{b}{f}$$

$$f = \frac{-16}{21} * \frac{b}{o}$$

$$b = \frac{-21}{16} * of$$

c)

$$\frac{-10a}{w} = \frac{-10y}{-7}$$

L :

$$a = \frac{-1}{7} * wy$$

$$w = -7 * \frac{a}{y}$$

$$y = -7 * \frac{a}{w}$$