

Lösungen:

<p>1</p>	<p>Bitte bestimmen Sie (nacheinander) die angegebenen Unbekannten.</p> <p>a)</p> $9,7hk + 8,1k = -7,8qt + 2,9h \quad [h \ k \ t \ q]$ <p>L :</p> $h = \frac{-7,8qt - 8,1k}{-2,9 + 9,7k}$ $k = \frac{-7,8qt + 2,9h}{9,7h + 8,1}$ $t = \frac{2,9h - 9,7hk - 8,1k}{7,8q}$ $q = \frac{2,9h - 9,7hk - 8,1k}{7,8t}$ <p>b)</p> $-8,6sz + 4,3 = -8,1fn + 1,4 \quad [s \ z \ n \ f]$ <p>L :</p> $s = \frac{-2,9 - 8,1fn}{-8,6z}$ $z = \frac{-2,9 - 8,1fn}{-8,6s}$ $n = \frac{-2,9 + 8,6sz}{8,1f}$ $f = \frac{-2,9 + 8,6sz}{8,1n}$
<p>2</p>	<p>Bitte rechnen Sie aus:</p> <p>a)</p> $\frac{-2,2bc - 5,6abc^2}{7,8a^2b^2c + 1,4ab^2} + \frac{-6,3c + 5,4c^2}{4,8c^2 + 2,9a^2}$ <p>L :</p> $\frac{-10,56bc^3 - 6,38a^2bc - 26,88abc^4 - 16,24a^3bc^2 - 49,14a^2b^2c^2 + 42,12a^2b^2c^3 - 8,82ab^2c + 7,56ab^2c^2}{37,44a^2b^2c^3 + 22,62a^4b^2c + 6,72ab^2c^2 + 4,06a^3b^2}$ <p>b)</p> $\frac{-5,8g^2h^2i + 6,4}{7,8hi - 6,3} - \frac{-5,6g - 3g^2i^2}{6,7h + 7,1}$ <p>L :</p> $\frac{-38,86g^2h^3i - 41,18g^2h^2i + 42,88h + 45,44 + 43,68ghi + 23,4g^2hi^3 - 35,28g - 18,9g^2i^2}{52,26h^2i + 55,38hi - 42,21h - 44,73}$

<p>3</p>	<p>Bitte bestimmen Sie (nacheinander) die angegebenen Unbekannten.</p> <p>a)</p> $\frac{5s + 8}{-5ou + 2eo} - 3g = j \quad [s \ u \ o \ e]$ <p>L :</p> $s = \frac{-5jou + 2ejo - 15gou + 6ego - 8}{5}$ $u = \frac{2ejo + 6ego - 5s - 8}{5jo + 15go}$ $o = \frac{-5s - 8}{5ju - 2ej + 15gu - 6eg}$ $e = \frac{-5jou - 15gou - 5s - 8}{-2jo - 6go}$ <p>b)</p> $\frac{-c - cr}{y - 2} - 8f = -3p \quad [c \ r \ y]$ <p>L :</p> $c = \frac{-3py + 6p + 8fy - 16f}{-1 - r}$ $r = \frac{-3py + 6p + 8fy - 16f + c}{-c}$ $y = \frac{6p - 16f + c + cr}{3p - 8f}$
<p>4</p>	<p>Bitte bringen Sie's in die Form $(\square + \square)(\square + \square)$</p> <p>a) $24r^2 - 53r - 7$ L: $(-8r - 1)(-3r + 7)$</p> <p>b) $14mx^2 - 2m + 7x^2 - 1$ L: $(2m + 1)(7x^2 - 1)$</p> <p>c) $-40eqt^2 + 32o^2qt^2 + 25eq^2 - 20o^2q^2$ L: $(-8qt^2 + 5q^2)(5e - 4o^2)$</p> <p>d) $-28m^4 - 29m^2 - 6$ L: $(-7m^2 - 2)(4m^2 + 3)$</p>
<p>5</p>	<p>Finden Sie bitte die quadratische Ergänzung</p> <p>a) $9z^4 + 6z^2$ L: $9z^4 + 6z^2 + 1 = (3z^2 + 1)^2$</p> <p>b) $d^4q^4 - 6d^2q^2$ L: $d^4q^4 - 6d^2q^2 + 9 = (d^2q^2 - 3)^2$</p> <p>c) $x^2 + px$ L: $x^2 + px + 0,25p^2 = (x + 0,5p)^2$;</p> <p>d) $4m^2q^4 - 4amq^2x$ L: $4m^2q^4 - 4amq^2x + a^2x^2 = (2mq^2 - ax)^2$</p> <p>e) $x^2 + 4x^2z^2$ L: $x^2 + 4x^2z^2 + 4x^2z^4 = (x + 2xz^2)^2$</p>