Hausaufgaben 17.9.2010 VKA/C

Lösungen:

1	Bitte lösen Sie die Gleichungssysteme a) - 4,1(-2,2i + 5,7q) + 5,5(1,2i + 1,5q) + 6,6 = 100,082 9,8(-2i + 5,1q) + 4,6(-4,4i - 1,8q) + 4,3 = -245,42 L: + 15,62i - 15,12q = 93,482 - 39,84i + 41,7q = -249,72 **i = 2,5;** **q = -3,6;** b) 8,56y - 8,66h = 13,3708 - 1,21y + 8,82h = 9,8076 L: **y = 3,12;** **h = 1,54;** c) $-\frac{5}{11}k - \frac{6}{7}t = -\frac{4}{77}$ $-\frac{17}{16}k - \frac{8}{3}t = -\frac{71}{126}$ L: $k = -\frac{8}{7};$ $t = \frac{2}{3}$
2	Bitte berechnen Sie die genannten Unbekannten a) $\frac{-7,3h - 8,5hr}{-6,5fw + 7,8vw} - 4,5s = 5,8x \quad [h\,r\,w]$ L: $h = \frac{-37,7fwx + 45,24vwx - 29,25fsw + 35,1svw}{-7,3 - 8,5r}$ $r = \frac{-37,7fwx + 45,24vwx - 29,25fsw + 35,1svw + 7,3h}{-8,5h}$ $w = \frac{7,3h + 8,5hr}{37,7fx - 45,24vx + 29,25fs - 35,1sv}$

b)

$$\frac{8,2bf+5,2}{6,4ek-1,1}-3x=-10g \quad [fbek]$$

$$L:$$

$$f = \frac{-64egk+11g+19,2ekx-3,3x-5,2}{8,2b}$$

$$b = \frac{-64egk+11g+19,2ekx-3,3x-5,2}{8,2f}$$

$$e = \frac{11g-3,3x-8,2bf-5,2}{64gk-19,2kx}$$

$$k = \frac{11g-3,3x-8,2bf-5,2}{64eg-19,2ex}$$

3 Bitte lösen Sie die Gleichungssysteme

a)

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 - 1,6n - 7,6i +   2q = -49,04
   5,7n -   5i + 1,4q = -13,92
 - 1,4n + 7,8i - 4,6q = 58,88
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L:
n = 2,8;
i = 4,1;
q = -6,7;

b)

$$\frac{3}{7}r+\frac{1}{2}c+\frac{1}{3}u=-\frac{250}{63}$$

$$\frac{1}{5}r+c+\frac{5}{3}u=-\frac{166}{45}$$

$$-\frac{4}{7}r-c-\frac{2}{5}u=\frac{310}{63}$$

$$L:$$

$$r=-9;$$

$$c=\frac{8}{9};$$

$$u=-\frac{5}{3}$$

c)

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 z + 4c - 4a = -5
4z - 5c - 5a = 12
6z + 9c + 8a = 17
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L:
z = 3;
c = -1;
a = 1;

d)
$-7(8y - 3p) - 5(-6y - q) - 10(3p + 3q) + 6 = -276$
$5(-4y + 5p) + 7(5y - 9q) + 10(4p - 6q) + 2 = -427$
$-4(-2y - 4p) - (-4y - 9q) + 7(-7p + 7q) - 10 = 371$

L:
y = 9;
p = -3;
q = 3;