**Hausaufgaben 10.9.2010** **VKA/C**

**Lösungen**:

| | |
|---|---|
| **1** | Bitte berechnen Sie die Unbekannten<br>a) $\frac{-\frac{10}{9}}{\frac{5}{9}x+2} + 3 = -17 \quad \vert \quad L: \quad x = -\frac{7}{2}$<br>b) $\frac{-2}{-\frac{5}{7}q-\frac{4}{5}} - \frac{9}{5} = -\frac{871}{95} \quad \vert \quad L: \quad q = -\frac{3}{2}$<br>c) $\frac{\frac{4}{5}}{\frac{3}{5}d+\frac{1}{10}} + \frac{9}{8} = \frac{127}{56} \quad \vert \quad L: \quad d = 1$<br>d) $\frac{\frac{1}{10}a-\frac{7}{8}}{-\frac{8}{3}a-\frac{5}{2}} + \frac{1}{4} = \frac{66}{265} \quad \vert \quad L: \quad a = 9$<br>e) $\frac{\frac{4}{3}h-\frac{4}{3}}{-\frac{7}{3}h-\frac{4}{3}} - \frac{2}{5} = -\frac{2}{5} \quad \vert \quad L: \quad h = 1$<br>f) $\frac{-\frac{9}{2}u-3}{-\frac{5}{3}u-6} - 7 = -\frac{89}{14} \quad \vert \quad L: \quad u = \frac{1}{4}$ |
| **2** | Bitte berechnen Sie die genannten Unbekannten<br>a)<br>$\frac{9s-2as}{4bi+5w}-6p=3q \quad [saiw]$<br>$L:$<br>$s = \frac{12biq+15qw+24bip+30pw}{9-2a}$<br>$a = \frac{12biq+15qw+24bip+30pw-9s}{-2s}$<br>$i = \frac{15qw+30pw-9s+2as}{-12bq-24bp}$<br>$w = \frac{12biq+24bip-9s+2as}{-15q-30p}$<br>b)<br>$\frac{2mz-m}{-r-8er}-3h=7p \quad [zmre]$<br>$L:$<br>$z = \frac{-7pr-56epr-3hr-24ehr+m}{2m}$<br>$m = \frac{-7pr-56epr-3hr-24ehr}{2z-1}$<br>$r = \frac{-2mz+m}{7p+56ep+3h+24eh}$<br>$e = \frac{-7pr-3hr-2mz+m}{56pr+24hr}$ |

c)

$$\frac{4,7r-6,1z}{1,1f+5,5}+5,4j=-4,7y \quad [r\,z\,f]$$

$$L:$$

$$r = \frac{-5,17fy-25,85y-5,94fj-29,7j+6,1z}{4,7}$$

$$z = \frac{-5,17fy-25,85y-5,94fj-29,7j-4,7r}{-6,1}$$

$$f = \frac{-25,85y-29,7j-4,7r+6,1z}{5,17y+5,94j}$$

d)

$$\frac{8,5w-4,9}{3,9x-4,3}-2,5h=-3,7o \quad [w\,x]$$

$$L:$$

$$w = \frac{-14,43ox+15,91o+9,75hx-10,75h+4,9}{8,5}$$

$$x = \frac{15,91o-10,75h-8,5w+4,9}{14,43o-9,75h}$$

**3** Bitte lösen Sie die Gleichungssysteme

a)

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 - 8j - 3t = 89
   2j +  t = -23
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**L:**
**j = -10;**
**t = -3;**

b)

$$\frac{3}{4}q+\frac{4}{3}f=\frac{71}{120}$$

$$-\frac{1}{3}q+\frac{9}{8}f=\frac{143}{240}$$

$$L:$$

$$q=-\frac{1}{10};$$

$$f=\frac{1}{2};$$

c)

5(-10f + 8j) - (-f - 4j) + 9 = 288
- 8(5f - 5j) + 3(-f - 8j) + 7 = 184

**L:**
**f = -3;**
**j = 3;**

d)

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- 5a - 4u + 4b = -37
   3a + 6u - 4b = 47
 - 3a + 7u - 9b = 57
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**L:**
**a = 1;**
**u = 6;**
**b = -2;**