Selbsttest Gleichungssysteme mit drei Unbekannten

Aufgabe: Bestimmen Sie aus den drei Gleichungen die drei Unbekannten.

a) $10k + 3f + 9y = -151$
   $9k + 9f + 2y = -106$
   $7k - 3f + 9y = -112$

b) $10n + 10f + v = -17$
   $3n + 8f - 5v = -1$
   $n + 4f + 7v = 31$

c) $8h + 6l + 9o = -49$
   $-6h + 9l - o = 60$
   $2h + 6l + 3o = -1$

d) $2u + 4j + i = 30$
   $9u + 8j + 5i = 81$
   $8u + 5j + 5i = 57$

e) $7u + 2o + 9n = -146$
   $7u + 3o + 9n = -154$
   $-u - 4o + 8n = -33$

f) $9p + 9v + i = 55$
   $9p + v + 5i = 39$
   $9p + 4v + 10i = -7$

g) $7w + 4q + 8y = 21$
   $8w + q + y = 52$
   $3w + 6q + 2y = 9$

h) $6z - 2v + 7e = 108$
   $3z + 2v + 8e = 42$
   $z + 8v + 9e = -34$

i) $k + 8l + 9j = -92$
   $2k + 4l + j = -22$
   $6k + 9l + 5j = -63$

j) $4i + 6j - 3o = 26$
   $8i + 5j + 9o = 36$
   $3i - 6j + o = 34$

k) $2z + 9r + 9o = -85$
   $7z + 8r + 4o = -62$
   $7z - 7r + 5o = -23$

l) $8u + 5z + 9j = -95$
   $2u + 7z + 9j = -143$
   $10u + 6z + 3j = -34$

m) $7t + 5k + 2a = 20$
   $3t + 7k + 7a = 6$
   $8t + 4k + 3a = 18$

n) $c + 2l + 2s = 36$
   $c + 6l + 9s = 122$
   $4c + 8l + s = 74$

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Lösungen:

a) 10k + 3f + 9y = -151
   9k + 9f + 2y = -106
   7k - 3f + 9y = -112
   L: k = -7;   f = -3;   y = -8

b) 10n + 10f + v = -17
   3n + 8f - 5v = -1
    n + 4f + 7v = 31
   L: n = -6;   f = 4;   v = 3

c) 8h + 6l + 9o = -49
   -6h + 9l - o = 60
   2h + 6l + 3o = -1
   L: h = -5;   l = 3;   o = -3

d) 2u + 4j + i = 30
   9u + 8j + 5i = 81
   8u + 5j + 5i = 57
   L: u = 9;   j = 5;   i = -8

e) 7u + 2o + 9n = -146
   7u + 3o + 9n = -154
   -u - 4o + 8n = -33
   L: u = -7;   o = -8;   n = -9

f) 9p + 9v +   i = 55
   9p + v + 5i = 39
   9p + 4v + 10i = -7
   L: p = 9;   v = -2;   i = -8

g) 7w + 4q + 8y = 21
   8w + q + y = 52
   3w + 6q + 2y = 9
   L: w = 7;   q = -1;   y = -3

h) 6z - 2v + 7e = 108
   3z + 2v + 8e = 42
    z + 8v + 9e = -34
   L: z = 10;   v = -10;   e = 4

i) k + 8l + 9j = -92
   2k + 4l + j = -22
   6k + 9l + 5j = -63
   L: k = 2;   l = -5;   j = -6

j) 4i + 6j - 3o = 26
   8i + 5j + 9o = 36
   3i - 6j + o = 34
   L: i = 8;   j = -2;   o = -2

k) 2z + 9r + 9o = -85
   7z + 8r + 4o = -62
   7z - 7r + 5o = -23
   L: z = -2;   r = -3;   o = -6

l) 8u + 5z + 9j = -95
   2u + 7z + 9j = -143
   10u + 6z + 3j = -34
   L: u = 5;   z = -9;   j = -10

m) 7t + 5k + 2a = 20
   3t + 7k + 7a = 6
   8t + 4k + 3a = 18
   L: t = 2;   k = 2;   a = -2

n) c + 2l + 2s = 36
    c + 6l + 9s = 122
   4c + 8l + s = 74
   L: c = 8;   l = 4;   s = 10