

4A, 8.2.2013 (26.2.13, E, B)

①

$$r = 4.73$$

$$s = -2.55$$

②

$$8a + 4b + 2c + d = 1$$

$$27a + 9b + 3c + d = 1.5$$

$$-a + b - c + d = 16.5$$

$$-8a + 4b - 2c + d = 29$$

$$f(x) = -\frac{1}{2}x^3 + 3x^2 - 5x + 3$$

③

$$\mathbb{L} = \{11, -7, 15\}$$

④

$$\left| \begin{array}{l} 2x - 5y + z = 8 \\ x + y - 2z = -1 \end{array} \right|$$

2 Gl. / 3 Unk.

$$4x - 10y + 2z = 16$$

$$g_3 = \frac{2}{5} \cdot g_1$$

$$\underline{2x + 2y} \rightarrow$$

$$x + y - 2z = -1$$

$$5x - 9y = 15$$

$$x \in \mathbb{R}$$

$$5x - 15 = 9y$$

$$y = \frac{5}{9}x - \frac{15}{9}$$

$$y = \frac{5}{9}x - \frac{5}{3}$$

$$y = \frac{5}{9}x - \frac{5}{3}$$

$$y = \frac{5}{9}x - \frac{5}{3} \text{ in } x + y - 2z = -1$$

einsetzen:

$$x + \frac{5}{9}x - \frac{5}{3} - 2z = -1$$

$$\frac{14}{9}x - \frac{5}{3} + 1 = 2z$$

$$\frac{14}{9}x - \frac{2}{3} = 2z$$

$$\frac{7}{9}x - \frac{1}{3} = z$$

$$\mathbb{L} = \left\{ \left(x \mid \frac{5}{9}x - \frac{5}{3} \mid \frac{7}{9}x - \frac{1}{3} \right) \right\}$$

$$y = \frac{5}{9}x - \frac{5}{3}$$

$$9y = 5x - 15$$

$$\frac{9y + 15}{5} = x = \frac{9}{5}y + 3$$

$$z = \frac{7}{9}x - \frac{1}{3}$$

$$= \frac{7}{9} \cdot \left(\frac{9}{5}y + 3 \right) - \frac{1}{3}$$

$$= \frac{7}{5}y + \frac{21}{9} - \frac{1}{3}$$

$$= \frac{7}{5}y + 2$$

$$\mathbb{L} = \left\{ \left(\frac{9}{5}y + 3 \mid y \mid \frac{7}{5}y + 2 \right) \right\}$$

(4)

$$\begin{aligned}2x - 5y + z &= 8 \\ -2x - 2y + 4z &= 2 \\ -7y + 5z &= 10 \\ y &= \frac{5z - 10}{7}\end{aligned}$$

(7)

$$\begin{aligned}2x + 3y &= a \\ 3x - y &= b \\ 9x - 3y &= 3b\end{aligned}$$

$$\begin{aligned}11x &= a + 3b \\ x &= \frac{a + 3b}{11}\end{aligned}$$

$$3\left(\frac{a + 3b}{11}\right) - y = b$$

$$3\frac{a + 3b}{11} - b = y$$

$$\frac{3a + 9b}{11} - \frac{11b}{11} = y = \frac{3a - 2b}{11}$$

⑥

$$x - y - \frac{1}{3}z = 0$$

$$\frac{1}{3}x - y + z = 0$$

$$\frac{1}{3}y - z = -10$$

$$3x - 3y - z = 0$$

$$x - 3y + 3z = 0$$

$$y - 3z = -30$$

$$~~-8x + 6y~~$$

$$x - 2y = -30$$

$$10x - 12y = 0$$

$$~~5x + 6y = 0~~$$

$$~~-3x + 6y = 30~~$$

$$~~2x = 30~~$$

$$~~x = 15~~$$

$$x - 2y = -30$$

$$5x - 6y = 0$$

$$-3x + 6y = 90$$

$$2x = 90$$

$$x = 45$$

$$y = \frac{225}{6} = \frac{75}{2} = 37.5$$

$$z = \frac{45}{2} = 22.5$$