S. 80 Nr. 2 $\quad T_1 \leftrightarrow T_2$?

a	W	W	W	W	F	F	F	F
b	W	W	F	F	W	W	F	F
c	W	F	W	F	W	F	W	F
T_1 $a \wedge b$	W	W	F	F	F	F	F	F
$a \wedge b \to c$	W	F	W	W	W	W	W	W
T_2 $a \to c$	W	F	W	F	W	W	W	W
$b \to c$	W	F	W	W	W	F	W	W
$() \vee ()$	W	F	W	W	W	W	W	W
$T_1 \leftrightarrow T_2$	W	W	W	W	W	W	W	W

$$E[A] = Bool^3 \to \text{Tautologie} \to \underbrace{T_1 \Leftrightarrow T_2}_{\text{sind äquivalent}}$$

$$\overset{\text{III}}{\neg}\,(\underbrace{a \leftrightarrow \overbrace{b \vee c}^{\text{I}}}_{\text{II}})$$

$$\neg(a \vee b) = \neg a \wedge \neg b$$

$$-(x + 3\cdot(y - z))$$

1) $2x \cdot (3 - y) - y \cdot (2 + x)$

$$6x \underline{- 2xy} - 2y \underline{- xy} = 6x - 3xy - 2y$$

2) $-(3x+2)(x-4) = -(3x^2 - 12x + 2x - 8)$

$$= -3x^2 + 10x + 8$$

3) $x^2y - 4x + x = x(xy - 4 + 1)$

S 82

1) $(6 + a - (c - 3 - d + 5 - (a + c + (6 - d))))$

$6 + a - (c - 3 - d + 5 - a - c - 5 + d)$

$6 + a + a + 3 = 3 + 2a + 5$

2) $16 - (3x + y - \frac{1}{2}z)(\frac{1}{2}z - 3x + y)$

$16 - (\frac{3}{2}xz - 9x^2 + 3xy + \frac{1}{2}yz - 3xy + y^2 - \frac{1}{4}z^2 + \frac{3}{2}xz - \frac{1}{2}yz)$

$16 - 3xz + 9x^2 - y^2 + \frac{1}{4}z^2$

3) $x - (2 + (3 - y + z - (2 + x - (y - z))))$

$x - (2 + 3 - y + z - 2 - x + y - z)$

$x - (3 - x) = 2x - 3$

4) $42 - (\frac{z}{y} + 2x - z)(z - 2x + \frac{z}{y})$

$42 - (\frac{2z}{y} - \frac{4x}{y} + \frac{4}{y^2} + 2xz - 4x^2 + \frac{4x}{y} - z^2 + 2xz - \frac{2z}{y})$

$42 - (4xz + 4/y^2 - 4x^2 - z^2)$

$42 - 4xz - 4/y^2 + 4x^2 + z^2$

S 85

1) $(2y + \frac{1}{2}x)(x - 4y) - 8 \cdot (\frac{1}{4}x + y)^2$

$\frac{1}{2} \cdot (x + 4y)(x - 4y) - 8 \cdot (\frac{1}{16}x^2 + \frac{1}{2}xy + y^2)$

$\frac{1}{2} \cdot (x^2 - 16y^2) - \frac{1}{2}x^2 - 4xy - 8y^2$

$\underline{\frac{1}{2}x^2} - 8y^2 \underline{- \frac{1}{2}x^2} - 4xy - 8y^2 = -16y^2 - 4xy = -4y(4y + x)$

2) $(2s - 3a)(3a - 2s) - (2a - s)^2$

$-(3a - 2s)(3a - 2s) - (2a - s)^2$

$-(9a^2 - 12as + 4s^2) - (4a^2 - 4as + s^2)$

$-9a^2 + 12as - 4s^2 - 4a^2 + 4as - s^2 = -13a^2 + 16as - 5s^2$

4) $\dfrac{2x + 5 \cdot \sqrt{x-1}}{3\sqrt{x} - 7} \cdot \dfrac{3\sqrt{x} + 7}{3\sqrt{x} + 7} = \dfrac{(2x + 5\sqrt{x-1})(3\sqrt{x} + 7)}{9x - 49}$

$(a+b)^n$

Pascal'sche Δ

$\left(\boxed{1/2}\,\boxed{-2x}\right)^5$

$(\ )^2\cdot(\ )^2\cdot(\ )$

Koeffizienten

Struktur

$(2i - 1/2)^4$

						n
		1				0
		1	1			1
	1	2	1			2
	1	3	3	1		3
1	4	6	4	1		4
$\Rightarrow$ 1	5	10	10	5	1	5

$1(1/2)^5(-2x)^0 + 5(1/2)^4(-2x)^1 + 10(1/2)^3(-2x)^2 + 10(1/2)^2(-2x)^3 + 5(1/2)^1(-2x)^4 + 1(1/2)^0(-2x)^5$

$1/32 \quad - 5/8\,x \quad + 5x^2 \quad - 20x^3 \quad + 40x^4 - 32x^5$

$1(2i)^4(-\tfrac{1}{2})^0 + 4(2i)^3(-\tfrac{1}{2})^1 + 6(2i)^2(-\tfrac{1}{2})^2 + 4(2i)^1(-\tfrac{1}{2})^3 + 1(2i)^0(-\tfrac{1}{2})^4$

$1\cdot 2^4 i^4\cdot 1 - 4\cdot 2^3 i^3\cdot \tfrac{1}{2} + 6\cdot 2^2\cdot i^2\cdot \tfrac{1}{2^2} - 4\cdot 2\cdot i\cdot \tfrac{1}{2^3} + 1\cdot 1\cdot \tfrac{1}{2^4}$

$\underset{1}{16i^4} - \underset{(-i)}{16i^3} + \underset{(-1)}{6i^2} - i + 1/16 = 10\tfrac{1}{16} + 15i$