S. 80 Nr. 2 $T_1 \Leftrightarrow T_2$?

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

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

1) $3a \cdot (b-4) - 2b \cdot (2+a)$

$3ab - 12a - 4b - 2ab = 1ab - 12a - 4b$

2) $(3x-2) \cdot (\tfrac{1}{2}y + 3) = \tfrac{3}{2}xy + 9x - y - 6$

3) $2x^2 - x = x(2x \boxed{-1})$

Binomische Formel: $(a \pm b)^2 = a^2 \pm 2ab + b^2$

$(a-b)(a+b) = a^2 - b^2$

$(\tfrac{1}{2}x - 3y)^2 = (\tfrac{1}{2}x)^2 - 2 \cdot (\tfrac{1}{2}x) \cdot 3y + (3y)^2$

$\tfrac{1}{4}x^2 - 3xy + 9y^2$

S 82

1) $(6+a-(c-3-d+5-(a+c+(6-d))))$ $\quad +(-1)\cdot(\dots)$

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

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

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

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

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

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

S 85

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

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

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

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

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

$-(3a - 2b)\cdot(3a - 2b) - (4a^2 - 4ab + b^2)$

$-(9a^2 - 12ab + 4b^2) - (\;"\;)$

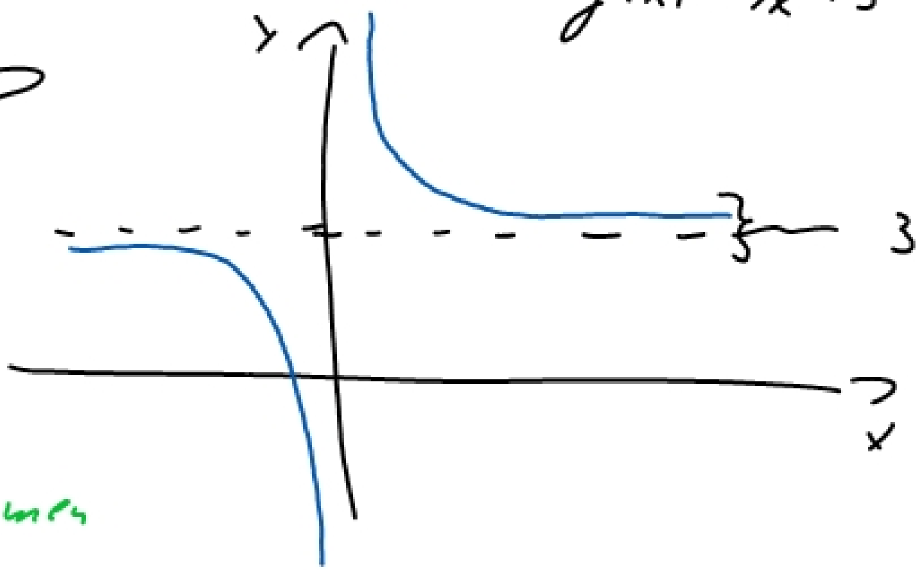
$-9a^2 + 12ab - 4b^2 - 4a^2 + 4ab - b^2 = -13a^2 + 16ab - 5b^2$

3) $\frac{5 - 2\sqrt{x}}{3 + \sqrt{2x}} \cdot \frac{3 - \sqrt{2x}}{3 - \sqrt{2x}} = \frac{(5 - 2\sqrt{x})\cdot(3 - \sqrt{2x})}{9 - 2x}$

$(a + b)$ $\quad$ $(a - b)$ $\quad$ $a^2 - b^2$

Limes

$f(x) = 1/x + 3$



$$\lim_{x \to 2} \frac{3x-6}{\sqrt{2x}-2} = \frac{0}{0}$$

$(x-2)$ Linearfaktor
muss vorkommen

$$\lim_{x \to 2} \frac{3(x-2)}{\sqrt{2x}-2} \cdot \frac{\sqrt{2x}+2}{\sqrt{2x}+2}$$

$2x - 4$

$2 \cdot (x-2)$

$$x^2 - 5x + 6 = 0$$

$$(x-3) \cdot (x-2) = 0$$

$x_1 = 3 \lor x_2 = 2$

$$\lim_{x \to 2} \frac{3 \cdot (x-2) \cdot (\sqrt{2x}+2)}{2 \cdot (x-2)} = \frac{12}{2} = 6$$

behebbare
Lücke
bei $(2|6)$

$(a+b)^n$

$(1 - 2i)^4$

												n
					1							0
				1		1						1
			1		2		1					2
		1		3		3		1				3
	1		4		6		4		1			4
1		5		10		10		5		1		5

$(2x + y)^5$

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

$32x^5 + 80x^4y + 80x^3y^2 + 40x^2y^3 + 10xy^4 + y^5$

$1 \cdot 1^4(-2i)^0 + 4 \cdot 1^3(-2i)^1 + 6 \cdot 1^2(-2i)^2 + 4 \cdot 1^1(-2i)^3 + 1 \cdot 1^0(-2i)^4$

$1 - 8i + 24i^2 - 32i^3 + 16i^4$

$1 - 8i - 24 + 32i + 16 = -7 + 24i$