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

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 $\quad a \wedge b$	W	W	F	F	F	F	F	F
$a \wedge b \to c$	W	F	W	W	W	W	W	W
T_2 $\quad a \to c$	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

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

$3 \cdot x = 9 \quad | \cdot \frac{1}{3}$ ≙ inverse zur Multiplikation

$\frac{1}{3} \cdot 3 = 1$ (neutrale)

1) $2a(b-3) - b(a+1)$

$\underline{2ab} - 6a \, \underline{-ab} - b = ab - 6a - b$

2) $(3a-5) \cdot (2a+1) = 6a^2 + 3a - 10a - 5$

$= 6a^2 - 7a - 5$

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

S 82

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

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

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

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

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

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

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

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

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

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

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

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

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

Binomische Formeln

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

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

$$(2x - 3y)^2 = (2x)^2 - 2\cdot(2x)(3y) + (3y)^2$$
$$= 4x^2 - 12xy + 9y^2$$

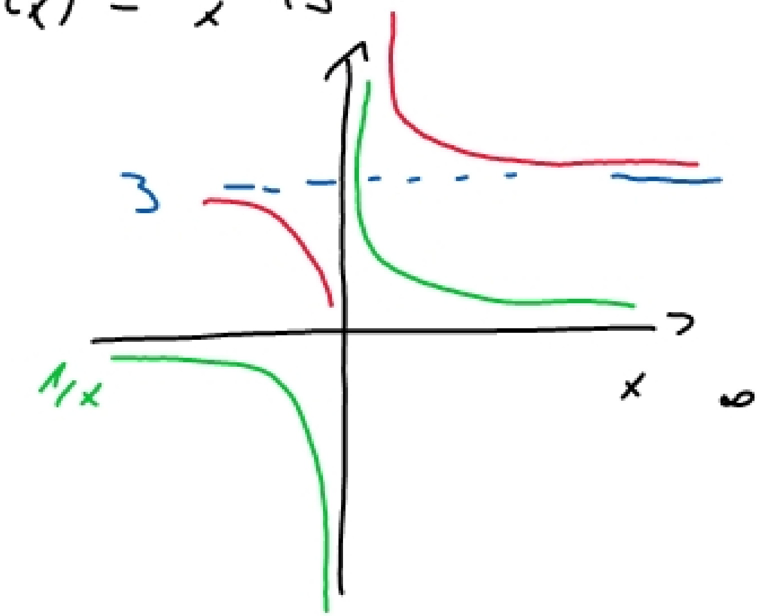
$x \in \mathbb{Q} \setminus \{\ldots\}$

$$\frac{2\sqrt{x} - 3}{4 - \sqrt{3x}}$$ machen Sie den Nenner rational

$$\frac{2\sqrt{x} - 3}{\underset{a\ -\ b}{4 - \sqrt{3x}}} \cdot \frac{4 + \sqrt{3x}}{\underset{a\ -\ b}{4 + \sqrt{3x}}} = \frac{(2\sqrt{x} - 3)\cdot(4 + \sqrt{3x})}{\underset{a^2\ -\ b^2}{16 - 3x}}$$

Limes

$f(x) = \frac{1}{x} + 3$



$2\cdot(x-3)$

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

Linearfaktor $(x-3)$

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

$3x-9$

$3\cdot(x-3)$

$$\lim_{x\to 3}\frac{2\cdot(x-3)\cdot(\sqrt{3x}+3)}{3\cdot(x-3)} = \frac{12}{3} = 4$$

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

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

$x_1=2 \vee x_2=3$

$(a+b)^n$

Pascal'sche $\triangle$

$(2x - \frac{1}{2})^5$

$(2x - \frac{1}{2})^2 \cdot (2x - \frac{1}{2})^2 \cdot (2x - \frac{1}{1})$

$(\frac{1}{2} - 2i)^4$

														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
	1		6		15		20		15		6		1	6

$$\frac{5 \cdot \overset{2^3}{\cancel{2^4}} \cdot x^4}{-2}$$

$$1(2x)^5\left(-\tfrac{1}{2}\right)^0 + 5(2x)^4\left(-\tfrac{1}{2}\right)^1 + 10(2x)^3\left(-\tfrac{1}{2}\right)^2 + 10(2x)^2\left(-\tfrac{1}{2}\right)^3 + 5(2x)^1\left(-\tfrac{1}{2}\right)^4 + 1(2x)^0\left(-\tfrac{1}{2}\right)^5$$

$$32x^5 - 40x^4 + 20x^3 - 5x^2 + \tfrac{5}{8}x - \tfrac{1}{32}$$

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

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