S 80 Nr. 2 $\quad a \land b \to c \leftrightarrow (a \to c) \lor (b \to c)$

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
$a \land b$	w	w	F	F	F	F	F	F
$a \land b \to c$	w	F	w	w	w	w	w	w
$a \to c$	w	F	w	F	w	w	w	w
$b \to c$	w	F	w	w	w	F	w	w
$(a \to c) \lor (b \to c)$	w	F	w	w	w	w	w	w
$\underline{I} \leftrightarrow \underline{II}$	w	w	w	w	w	w	w	w

$E[A] = Bool^3 \to$ Tautologie $\to$ Äquivalenz : $\overline{T_1} \Leftrightarrow \overline{T_2}$

$T_1(a,b,c) = a \land b \rightarrow c$

Äquivalenzformel

$\neg(a \land b) \lor c$

de Morgan

$\underline{\neg a \lor \neg b \lor c}$

$T_2(a,b,c) = (a \rightarrow c) \lor (b \rightarrow c)$

Äquivalenzformel

$(\neg a \lor c) \lor (\neg b \lor c)$

asso. + komm

$\neg a \lor \neg b \lor (c \lor c)$

idempotent

$\underline{\neg a \lor \neg b \lor c}$

3) $\underbrace{(\neg x \wedge z) \vee (x \wedge y)}_{A_2} \rightarrow \underbrace{(x \wedge y) \vee (\neg x \wedge z) \vee (y \wedge z)}_{A_1}$

x	W	W	W	W	F	F	F	F
y	W	W	F	F	W	W	F	F
z	W	F	W	F	W	F	W	F
$\neg x \wedge z$	F	F	F	F	W	F	W	F
$x \wedge y$	W	W	F	F	F	F	F	F
$(\neg x \wedge z) \vee (x \wedge y)$	W	W	F	F	W	F	W	F
$x \wedge y$	W	W	F	F	F	F	F	F
$\neg x \wedge z$	F	F	F	F	W	F	W	F
$y \wedge z$	W	F	F	F	W	F	F	F
$() \vee () \vee ()$	W	W	F	F	W	F	W	F
$A_2 \rightarrow A_1$	W	W	W	W	W	W	W	W

$E[A] = Bool^3 \rightarrow$ Tautologie : Implikation $A_2 \Rightarrow A_1$

S. 82 Nr. 2 $\quad 16-(3x+y-\frac{1}{2}z)(\frac{1}{2}z-3x+y)$

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

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

Nr. 6) $\quad -2z+2x-(1+2\cdot(4+y-z-2x)-3y+6x)$

$-2z+2x-(\underline{1}+\underline{8}+\underline{2y}-2z\ \underline{-4x}\ \underline{-3y}+\underline{6x})$

$-2z+2x-(9-y+2x-2z)$

$-2z+2x-9+y-2x+2z$

$-9+y$

Binome für den Kopf

1) $37 \cdot 43 = (40-3)(40+3) = 1.600 - 9 = 1591$

2) $41^2 = (40+1)^2 = 1681$

→ Vorne Quadrat	1.600
→ Hinten Quadrat (Hand)	1
→ Vorne · Hinten · 2	80

3) $28^2 = (30-2)^2 = 784$

→ Vorne Quadrat	900
→ Hinten Quadrat (Hand)	4
→ Vorne · Hinten · 2	− 120

$$\lim_{x \to 4} \frac{2x - 8}{\sqrt{3 \cdot x + 13} - 5} = 0/0 \qquad \text{Linearfaktor } (x-4)$$

$$\frac{2 \cdot (x-4)}{\underset{a\ \ -\ \ b}{\sqrt{3x+13} - 5}} \cdot \frac{\sqrt{3x+13} + 5}{\underset{a\ \ +\ \ b}{\sqrt{3x+13} + 5}}$$

$$\frac{2 \cdot (x-4) \cdot \left(\sqrt{3x+13} + 5\right)}{(3x+13) - 25} \qquad (3x+13) - 25 = 3x - 12 = 3 \cdot (x-4)$$

$$\frac{2\,(x-4) \cdot \left(\sqrt{3x+13} + 5\right)}{3 \cdot (x-4)}$$

$$\lim_{x \to 4} \frac{2 \cdot \left(\sqrt{3x+13} + 5\right)}{3} = \frac{20}{3} = 6\tfrac{2}{3} = 6,\overline{6}$$