DS 8 Zusatzaufgabe

Mantisse · Basis$^{\text{Exponent}}$

$1.1 \cdot 2^3$

Sign	Exponent	Mantisse
0	00	00

Basis = 2 (bin)

Ziffern Mantisse = 2

Ziffern Exponent = 2

Sign = 0

a)

$\text{Bias} = 2^{(n-1)} - 1 = 2^{2-1} - 1 = 1$

$e_{min} = 0$

$e_{max} = 1$

b)

Mantisse	Exponent 00	01	10	11
00 M_{min}	$(0.00)_2 \cdot 2^0 = (0.0)_{10}$	$(1.00)_2 \cdot 2^0 = (1.0)_{10}$	$(1.00)_2 \cdot 2^1 = (1.0)_{10}$	∞
01	$(0.01)_2 \cdot 2^0 = (0.25)_{10}$	$(1.01)_2 \cdot 2^0 = (1.25)_{10}$	$(1.01)_2 \cdot 2^1 = (1.5)_{10}$	NaN
10	$(0.10)_2 \cdot 2^0 = (0.5)_{10}$	$(1.10)_2 \cdot 2^0 = (1.5)_{10}$	$(1.10)_2 \cdot 2^1 = (2.0)_{10}$	NaN
11 M_{max}	$(0.11)_2 \cdot 2^0 = (0.75)_{10}$	$(1.11)_2 \cdot 2^0 = (1.75)_{10}$	$(1.11)_2 \cdot 2^1 = (2.5)_{10}$	NaN