2)

$$f_{(x_1,x_2,x_3)} = \left(x_3 \;?_1\, (x_3 \;?_2\, x_2)\right) \land \overline{(\overline{x_3} \;?_3\, x_2)} \land x_1 \lor \left(\overline{x_1} \land \overline{x_2}\right))$$

$$x_1 \lor (\overline{x_1} \land \overline{x_2}) = (x_1 \lor \overline{x_1}) \land (x_1 \lor \overline{x_2})$$
$$= \quad 1 \quad \land \; (x_1 \lor \overline{x_2})$$
$$= (x_1 \lor \overline{x_2})$$

$$\to \; x_3 = \underbrace{\left(x_3 \;?_1\, (x_3 \;?_2\, x_2)\right)}_{x_3} \land \left(\overline{\overline{x_3} \;?_3\, x_2}\right)$$
$$\longrightarrow$$

$$x_3 \;?_1\, (x_3 \;?_2\, x_2) = x_3 \quad \text{wenn} \quad ?_1 \neq ?_2$$

$$\to \; x_3 \land \left(\overline{\overline{x_3} \;?_3\, x_2}\right) = x_3 \land \left(x_3 \;\overline{?_3}\; \overline{x_2}\right)$$

$$\to \; \overline{?_3} = \land$$

$$\left(x_3 \;?_1\, (x_3 \;?_2\, x_2) \land \left(\overline{\overline{x_3} \;?_3\, x_2}\right)\right) = x_3$$
$$\left(x_3 \;?_1\, (x_3 \;?_2\, x_2) \land (x_3 \;\overline{?_3}\; \overline{x_2})\right) = x_3 \; ; \; \text{mit} \; \overline{?_3} = \lor$$
$$\Rightarrow \left(x_3 \;?_1\, (x_3 \;?_2\, x_2)\right) = (x_3 \lor x_2)$$
$$\to \; ?_1 = ?_2 = \lor$$

Möglichkeiten:
$$f_v(x_1,x_2,x_3) = x_3 \land (x_1 \lor \overline{x_2})$$
$$f_1(x_1,x_2,x_3) = \left(x_3 \land (x_3 \lor x_2)\right) \land \left(\overline{\overline{x_3} \land x_2}\right) \land \left(x_1 \lor (\overline{x_1} \land \overline{x_2})\right)$$
$$f_2(x_1,x_2,x_3) = \left(x_3 \lor (x_3 \land x_2)\right) \land \left(\overline{\overline{x_3} \land x_2}\right) \land \left(x_1 \lor (\overline{x_1} \land \overline{x_2})\right)$$
$$f_3(x_1,x_2,x_3) = \left(x_3 \lor (x_3 \lor x_2)\right) \land \left(\overline{\overline{x_3} \land x_2}\right) \land \left(x_1 \lor (\overline{x_1} \land \overline{x_2})\right)$$

x_1	x_2	x_3	f_v	f_1	f_2	f_3
0	0	0	0	0	0	0
0	0	1	1	1	1	1
0	1	0	0	0	0	0
0	1	1	0	0	0	0
1	0	0	0	0	0	0
1	0	1	1	1	1	1
1	1	0	0	0	0	0
1	1	1	1	1	1	1