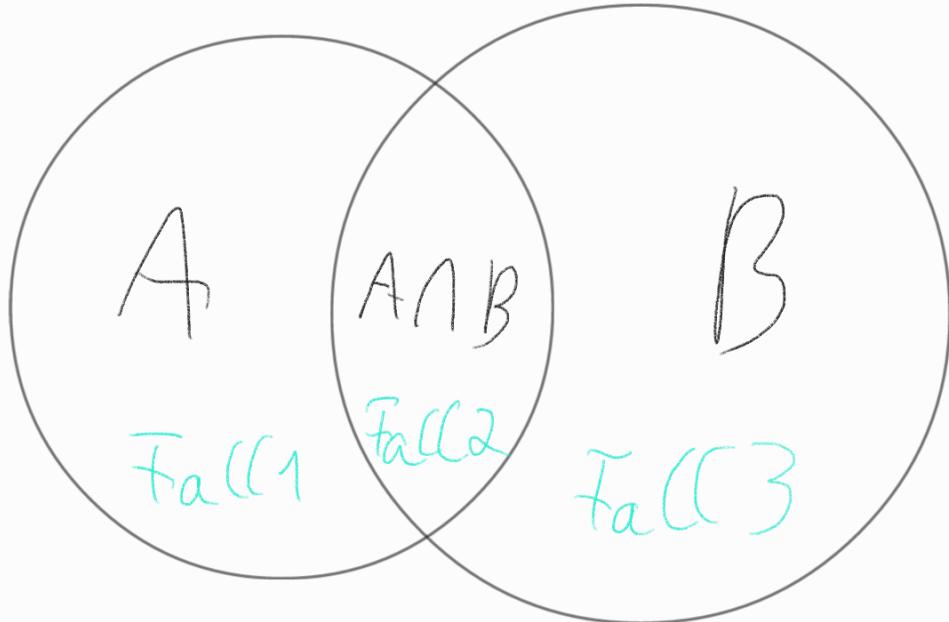


$$D) P(A) \cap P(B) = P(A \cap B)$$



$$P(M) \underset{\text{def}}{=} \sum_{U | U \subseteq M} \{U\}$$

$$\{U | U \subseteq A\} \cap \{U | U \subseteq B\} = \{U | U \subseteq A \cap B\}$$

Fall 1:

Wenn  $U \not\subseteq B$ , dann kann  $U \not\subseteq A \cap B$

Fall 3:

Wenn  $U \not\subseteq A$ , dann kann  $U \not\subseteq A \cap B$

Fall 2:

$U \subseteq A$  und  $U \subseteq B$ , dann

auch  $U \subseteq A \cap B$  und damit

$$P(A \cap B) = P(A) \cap P(B)$$

Gegebenbeispiel für

$$P(A) \cup P(B) = P(A \cup B)$$

$$A = \{a, b\} \quad B = \{c\}$$

$$P(A) = \{\emptyset, a, b, \{a, b\}\}$$

$$P(B) = \{\emptyset, c\}$$

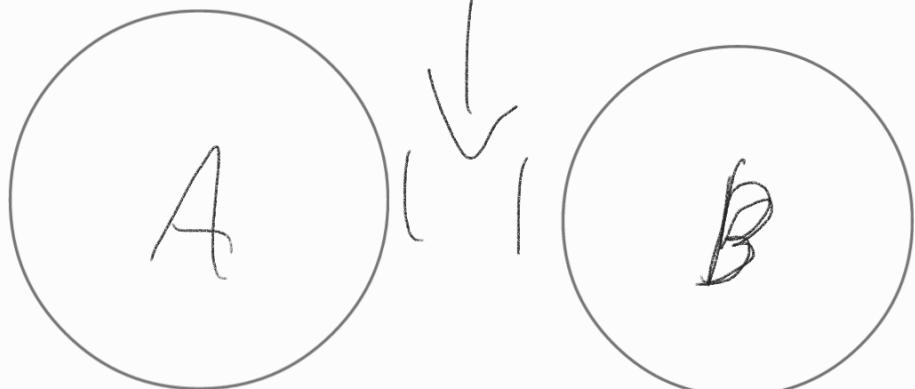
$$P(A) \cup P(B) =$$

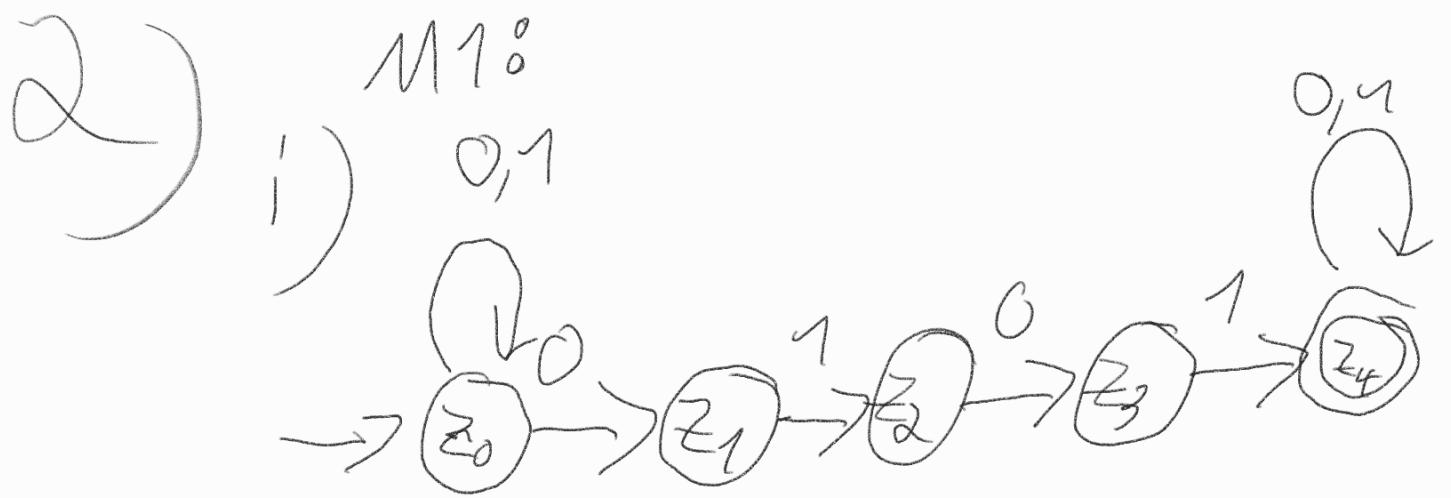
$$\{\emptyset, a, b, c, \{a, b\}\}$$

$$A \cup B = \{a, b, c\}$$

$$P(A \cup B) = \{\emptyset, a, b, c, \{a, b\}, \\ \{b, c\}, \{a, c\}, \{a, b, c\}\}$$

$$A \cap B = \emptyset$$





ii)  $M1' = (P(\{z_0, z_1, z_2, z_3, z_4\}),$   
 $\{\emptyset, \{z_1\}, \delta', \{z_0\}, E\})$

$E = \{\{z_0, z_2, z_4\}, \{z_0, z_4\}, \{z_0, z_1, z_4\}$   
 $\{z_0, z_1, z_3, z_4\}\}$

$$\delta'(\{z_0\}, 0) = \{z_0, z_1\}$$

$$\delta'(\{z_0\}, 1) = \{z_0\}$$

$$\delta'(\{z_0, z_1\}, 0) = \{z_0, z_1\}$$

$$\delta'(\{z_0, z_1\}, 1) = \{z_0, z_2\}$$

$$\delta'(\{z_0, z_2\}, 0) = \{z_0, z_1, z_3\}$$

$$\delta'(\{z_0, z_2\}, 1) = \{z_0\}$$

$$\delta'(\{z_0, z_1, z_3\}, 0) = \{z_0, z_1\}$$

$$\delta'(\{z_0, z_1, z_3\}, 1) = \{z_0, z_2, z_4\}$$

$$\delta'(\{z_0, z_2, z_4\}, 0) = \{z_0, z_1, z_3, z_4\}$$

$$\delta'(\{z_0, z_2, z_4\}, 1) = \{z_0, z_4\}$$

$$\delta'(\{z_0, z_1, z_3, z_4\}, 0) = \{z_0, z_1, z_4\}$$

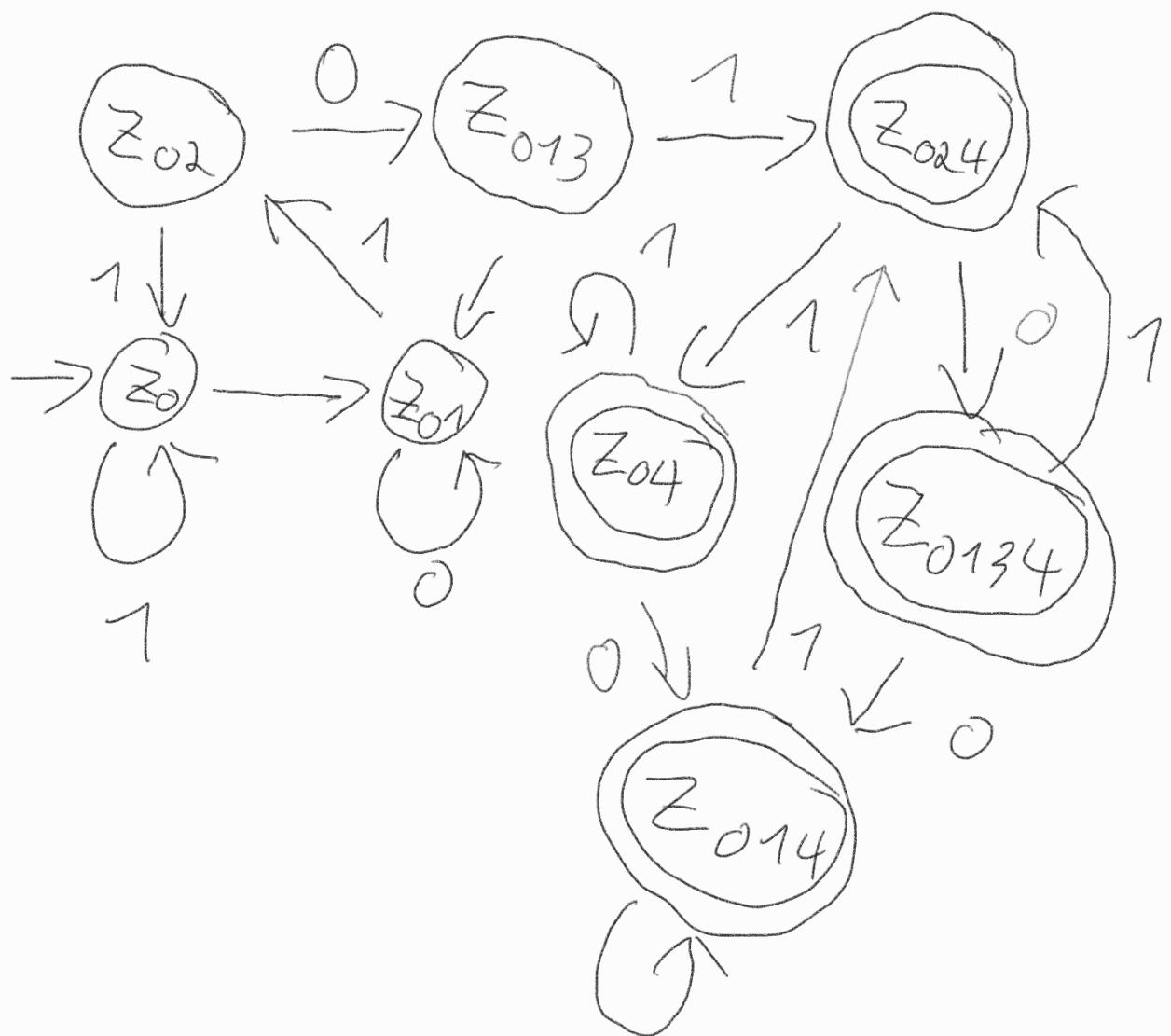
$$\delta'(\{z_0, z_1, z_3, z_4\}, 1) = \{z_0, z_2, z_4\}$$

$$\delta'(\{z_0, z_1, z_4\}, 0) = \{z_0, z_1, z_4\}$$

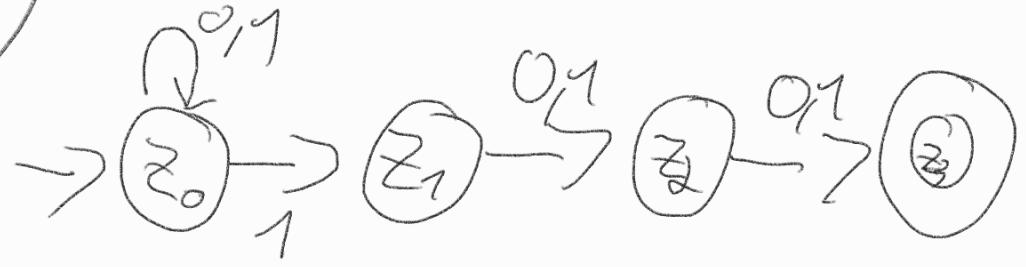
$$\delta'(\{z_0, z_1, z_4\}, 1) = \{z_0, z_2, z_4\}$$

$$S^1(\{z_0, z_4\}, 0) = \{z_0, z_1, z_4\}$$

$$S^1(\{z_0, z_4\}, 1) = \{z_0, z_4\}$$



3) ij M2:



ii)

