Aufgabe 2

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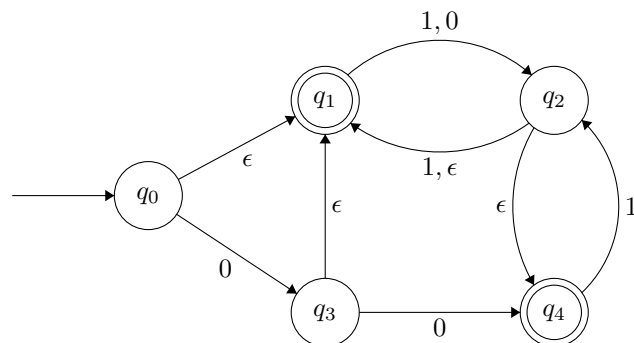# Chapter 1

Task 1

1.1   c)
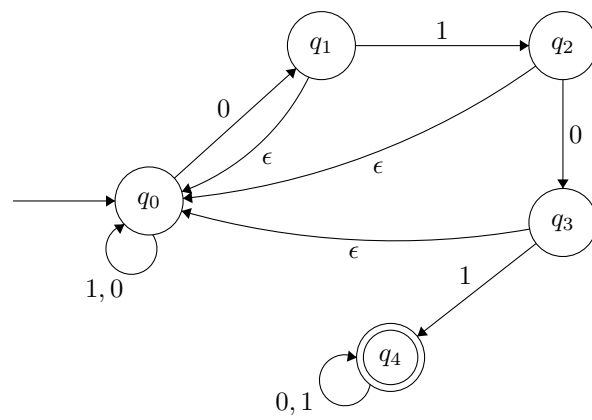
1.2   d)

Chapter 2

Task2

2.1   a)

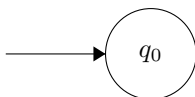If we chose the machine M as follows:

$$M = (q_0, \emptyset, \delta, q_0, q_0)$$

Then it can be proved that the only language accepted by a machine which has only the start state is the empty string ϵ. So the second machine would have as complement language

$$\Sigma^* \backslash \epsilon \to \epsilon \backslash \epsilon = \emptyset$$

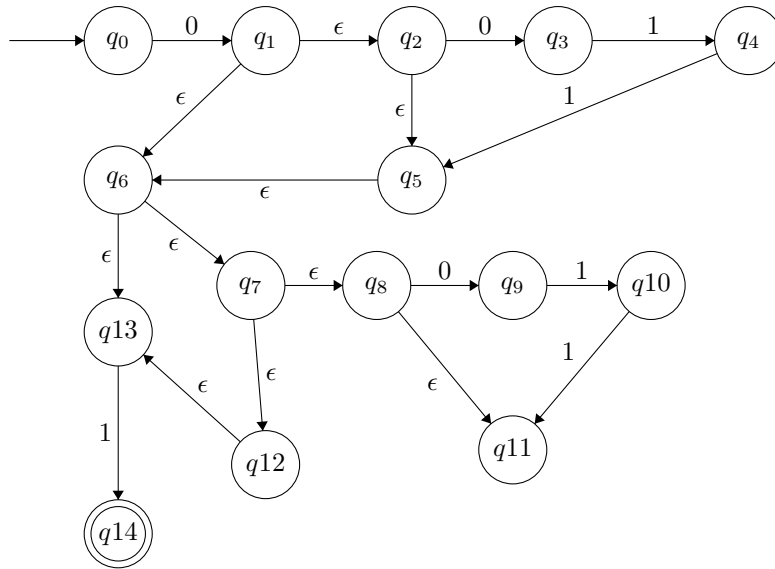remembering that $\emptyset^* = \epsilon$.
So this would mean that the machine M' would be something similar to this.

Thus meaning that no language could be accepted by this machine.

2.2   b)

2.3   c)

Chapter 3

Task 3

Chapter 4

Task 5