Ex 2.1

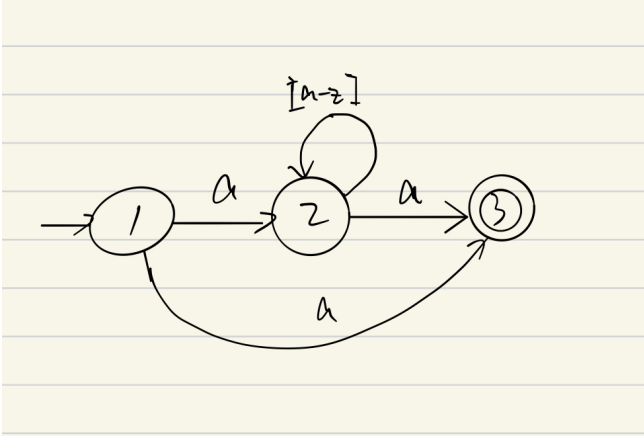
(a) a|a[a-z]*a

(c) [1-9][0-9]*

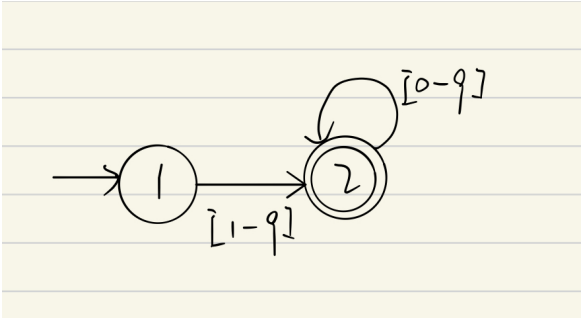
(d) [0-9]*(0|2|4|6|8)

Ex 2.8

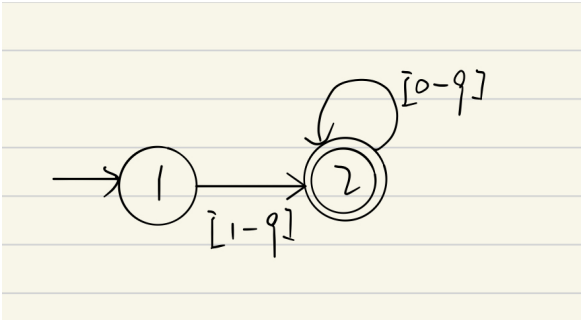
(a)



(c)

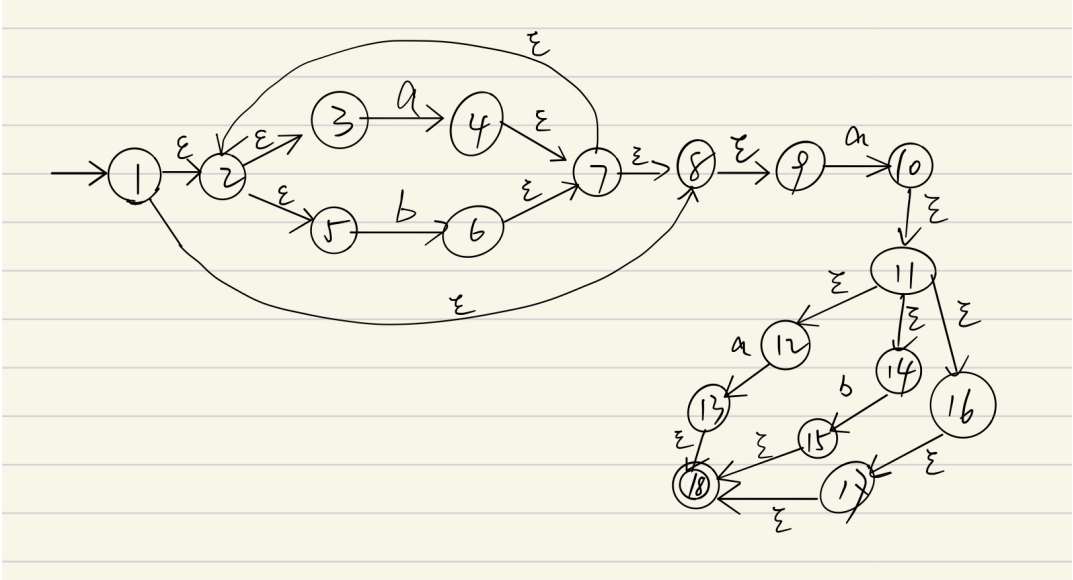


(d)



Ex 2.12

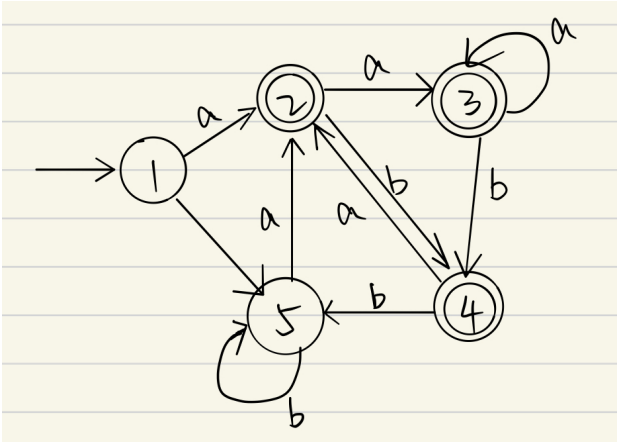
(a)



(b)

The constructed subsets:

$$
\begin{aligned}
1 &\begin{cases} \overline{\{1\}} = \{1,2,3,5,8,9\} \\ \overline{\{1\}}_a = \{4,10\} \\ \overline{\{1\}}_b = \{6\} \end{cases} \\
2 &\begin{cases} \overline{\{4,10\}} = \{4,7,2,3,5,8,9,10,11,12,14,16,17,18\} \\ \overline{\{4,10\}}_a = \{4,10,13\} \\ \overline{\{4,10\}}_b = \{6,15\} \end{cases} \\
3 &\begin{cases} \overline{\{4,10,13\}} = \{4,7,2,3,5,8,9,10,11,12,13,14,16,17,18\} \\ \overline{\{4,10,13\}}_a = \{4,10,13\} \\ \overline{\{4,10,13\}}_b = \{6,15\} \end{cases} \\
4 &\begin{cases} \overline{\{6,15\}} = \{6,7,2,3,5,8,9,15,18\} \\ \overline{\{6,15\}}_a = \{4,10\} \\ \overline{\{6,15\}}_b = \{6\} \end{cases} \\
5 &\begin{cases} \overline{\{6\}} = \{6,7,2,3,5,8,9\} \\ \overline{\{6\}}_a = \{4,10\} \\ \overline{\{6\}}_b = \{6\} \end{cases}
\end{aligned}
$$


1
2
3
4
5
a
a
a
a
a
b
b
b
b
b